

CLASS 33, GEOMETRICAL INSTRUMENTS**SECTION I - CLASS DEFINITION**

This class provides for means for determining the characteristics and the mutual relation of points, lines, angles, surfaces, and solids, considered as having no properties but those arising from extension and difference of situation. It includes mechanically guided means for describing lines. Processes or methods are classified in the appropriate subclasses with instruments unless specifically provided for by a process subclass. For the most part specific subclasses are not provided for compound instruments; but an invention comprising matter classifiable in more than one specific subclass is placed in the subclass having the lowest number and cross-referenced into the subclass or subclasses having the higher number or numbers.

- (1) Note. This class includes the combination of recording means with significant measuring structures of the type provided for in this class.
- (2) Note. The following matter is excluded: The measurement of fluent material. Instruments falling in this class in combination with check-controlled means or in combination with a series of signals exceeding two. Observation instruments in which the principle of operation depends upon diverting light. Means for guiding or stopping tools other than scribes. Means for automatically assorting objects. Means connected with a device classifiable elsewhere to automatically indicate the relative position of movable parts of said device. (This does not refer to means connected with a device classifiable elsewhere to indicate the position of said device with relation to other things not a part of the device).

SECTION II - REFERENCES TO OTHER CLASSES**SEE OR SEARCH CLASS:**

- 7, Compound Tools, subclass 150 for hand saws combined with straight edges, levels, etc., to be used as gauges, try squares, etc.
- 34, Drying and Gas or Vapor Contact With Solids, subclass 89.2 for the combination of a straight-edge with a blotter.

- 73, Measuring and Testing, appropriate subclass for combinations of geometrical instruments with other characters of measuring and testing devices.
- 84, Music, subclasses 461+ for devices for recording the movement of keys of a keyboard.
- 194, Check-Actuated Control Mechanisms, appropriate subclasses for instruments of the type found in this class in combination with check-controlled means for restricting their use.
- 338, Electrical Resistors, subclasses 13+ for electrical resistors whose resistance value is responsive to a condition or with a condition sensing actuator, no structure being claimed such as a meter for indicating the resistance value. See also section XVI of the class definitions of Class 338.
- 340, Communications: Electrical, subclasses 870.01+ for telemetric means per se comprising electrical transmitting means in combination with means designed to be located at a distance having a movable indicator electrically controlled by the transmitter but not limited to any particular instrument. The combinations of telemetric signaling means with measuring means of the type provided for in Class 33 are in Class 33.
- 346, Recorders, appropriate subclasses for recorders, per se.
- 356, Optics: Measuring and Testing, for optical angle, distance, alignment, or configuration determining or measuring instruments, or other mensuration or fiducial instruments. See sections III and V of the Class 356 definitions for the particular measuring instruments found in Classes 33 and 356.
- 374, Thermal Measuring and Testing, subclasses 6+ for determining a distance or position by measuring a related thermal quantity.

SUBCLASSES

- 1 This subclass is indented under the class definition. Inventions falling not provided for in the following subclasses.
- 2 This subclass is indented under the class definition. Subject matter for ascertaining the size and shape of clothing for the human body and for laying out the work from the data obtained.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 18+, for devices which may be used in scribing the outlines of patterns.
 175+, for devices adapted to be adjusted to conform to a portion of the body and retain the form of that portion of the body when removed therefrom.
 178+, when the dimension desired is one of circular size only.
 572, and 662, for devices for marking the position of buttons and buttonholes.
- SEE OR SEARCH CLASS:
 223, Apparel Apparatus, subclasses 66+ for forms upon which garments may be fitted.
- 3** This subclass is indented under subclass 2. Subject matter relating to footwear.
- SEE OR SEARCH CLASS:
 36, Boots, Shoes, and Leggings, subclass 8.4, for fitting shoes.
- 4** This subclass is indented under subclass 3. Means employed in laying out footwear.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 650, for gauges for marking the location of buttons and buttonholes for shoes.
- 5** This subclass is indented under subclass 4. Means having shapes corresponding to the desired shape of the portion of the footwear being laid out.
- 6** This subclass is indented under subclass 3. Methods employed in taking measurements for or in laying out footwear.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 17, for methods employed in taking measurements for or in laying out apparel other than footwear.
- 7** This subclass is indented under subclass 2. Instruments for ascertaining garment dimensions having level or plumb attachments.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 365+, for level or plumb structure, per se.
- 8** This subclass is indented under subclass 2. Instruments having a portion adapted to rest on a support other than the body being fitted.
- 9** This subclass is indented under subclass 8. Stand-supported instruments for ascertaining the dimensions of skirts. Usually gauges for marking the bottom of the skirt.
- 10** This subclass is indented under subclass 9. Devices having platforms upon which the person being fitted stands.
- 11** This subclass is indented under subclass 2. Means employed in laying out the garment on the cloth. Tailors' squares, unless especially designed for taking measurements from the body are considered laying out instruments and are classifiable here.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 403+, for square and bevel and ruler structure generally.
- 12** This subclass is indented under subclass 11. Means having shapes or outlines corresponding to the desired shape of the portion of the garment being designed. Also includes fabrics having pattern lines placed thereon.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 11, and 16, for curves and rules of various shapes which conform in part to the portion of the garment being laid out, but which are intended to be moved about from one side to another and not intended to correspond in shape to the entire portion under consideration.
- 13** This subclass is indented under subclass 12. Devices having perforated outlines through which the garment may be marked on the fabric.
- 14** This subclass is indented under subclass 12. Devices having relatively adjustable parts.

- 15** This subclass is indented under subclass 14. Devices adjustable by being placed upon the person and caused to conform thereto.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
512+, for gauges which will retain a shape corresponding to the shape of the object when removed therefrom.
- 16** This subclass is indented under subclass 11. Means adapted for laying out the garment, which have relatively adjustable parts.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
14+, for adjustable patterns and charts.
- 17** This subclass is indented under subclass 2. Subject matter comprising methods employed in taking measurements for and laying out apparel.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
6, for analogous methods involving footwear.
- 18.1 SCRIBER:**
This subclass is indented under the class definition. Subject matter comprising mechanically guided relatively traveling means for describing a line.
- (1) Note. The “means for describing a line” generally includes a scribing member.
- (2) Note. The scribing member may scratch, score, engrave, ink, pencil or mark by other means.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
574+, and 666+, for devices having marking points, but in which no special means is provided for permitting travel of the point or in which both points are not designed for drawing lines.
- SEE OR SEARCH CLASS:
30, Cutlery, subclasses 164.9+ for hand manipulable devices for marking by means of cutting and subclass 310 for sweep cutters.
- 65, Glass Manufacturing, subclasses 174+ for a glassworking apparatus combined with a mechanical cutter, scorer or scribe; see the “Search Notes” thereunder.
- 83, Cutting, subclasses 861+ for devices for cutting other than completely through work thicknesswise.
- 84, Music, subclasses 461+ for devices for recording the movement of keys of a keyboard.
- 144, Woodworking, subclass 42 for a woodworking machine which scores a board and slices it, and subclasses 136.1+ for a machine for longitudinally scoring and corrugating a wood surface.
- 172, Earth Working, subclasses 126+ for a means for making a guide line in the earth combined with some other earth working means and see other appropriate subclasses for means for making a furrow in the earth.
- 266, Metallurgical Apparatus, subclasses 48+ for devices for cutting metal by means of a blow torch.
- 346, Recorders, appropriate subclasses for machine responsive recorders.
- 409, Gear Cutting, Milling and Planing, subclasses 288+ for devices in which a cutting tool is rigidly set, so that it may not yield to the inequalities of the work surface, or in which the tool is given a relative travel in close-lying consecutive lines over the work and caused to produce solid effects by cutting during a portion of its travel only.
- 413, Sheet-Metal Ware, Making, subclass 55 for devices for making weakened lines in cans.
- 493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclasses 59+ for machines which cut and score box blanks and machines which either cut or score such blanks and are especially designed for use in the manufacture of paper boxes.

- 18.2 Writing:**
This subclass is indented under subclass 18.1. Subject matter wherein the means for describing a line produces script.
- 18.3 Perspective drawing:**
This subclass is indented under subclass 18.1. Subject matter wherein the means for describing a line generates an oblique three-dimensional drawing from plan and elevational drafting views.
- 19.1 Graduating:**
This subclass is indented under subclass 18.1. Subject matter for scribing scale divisions on dials, rules and the like.
- SEE OR SEARCH CLASS:
409, Gear Cutting, Milling, or Planing, subclasses 221+ for an indexing device for a milling machine.
- 19.2 Straightline:**
This subclass is indented under subclass 19.1. Subject matter wherein the means for describing a line marks along a linear path.
- 19.3 Circular:**
This subclass is indented under subclass 19.1. Subject matter wherein the means for describing a line marks along a round path.
- 20.1 Sight-line controlled:**
This subclass is indented under subclass 18.1. Subject matter wherein the movement of a scribing member is controlled by sighting means between the eyes of an observer and distant point.
- 20.2 Course tracking:**
This subclass is indented under subclass 20.1. Subject matter wherein an observer, moving to a fixed distant point, establishes at various points in his movement a line of sight through the sighting means to the distant point to note with the scribing member points in the path of the observer to the distant point.
- 20.3 Perspective view tracing:**
This subclass is indented under subclass 20.1. Subject matter wherein the sighting means moving about a distant scene causes movement of the scribing member to duplicate the distant scene.
- 20.4 Stereoscopic mapping:**
This subclass is indented under subclass 20.1. Subject matter wherein the sighting means views two stereoscopic images to control the scribing member.
- 21.1 Curved surface:**
This subclass is indented under subclass 18.1. Subject matter wherein the means for describing a line marks a surface that is not planar.
- 21.2 Spherical:**
This subclass is indented under subclass 21.1. Subject matter wherein the surface marked is a three-dimensional round surface or a portion of such a round surface.
- 21.3 Pipe junction:**
This subclass is indented under subclass 21.1. Subject matter wherein the surface is a first tube marked to show the intersection outline of a second tube on the surface of the first tube.
- 21.4 Tumbler engraving:**
This subclass is indented under subclass 21.1. Subject matter wherein the surface marked is a drinking glass.
- 22** This subclass is indented under subclass 21. Devices employing a pantographic movement.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
23+, for other pantographic scribers.
- 23.01 Pantographic:**
This subclass is indented under subclass 18.1. Subject matter which includes a tracing member designed to be grasped by hand and moved as desired and a scribing member so connected with the tracing member that movement of the tracing member causes a similar movement to be transmitted to the scribing member.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
22, for pantographic scribers for curved surfaces.
41.1+, for parallel line hand scribing gages comprising merely a bar having a guiding or tracing member at one end

- and a scribing member at the other where the entire instrument moves bodily.
- 23.02 Single beam:**
This subclass is indented under subclass 23.01. Subject matter wherein the tracing member and the scribing member are supported by the same elongated lever.
- 23.03 Superposed carriages:**
This subclass is indented under subclass 23.01. Subject matter wherein the means for describing a line includes plural movable supports each movable on a different transverse direction in a different plane.
- 23.04 Sliding pivot:**
This subclass is indented under subclass 23.01. Subject matter wherein the means for describing a line includes a guideway and a pin that frictionally contacts and follows the guideway.
- 23.05 Opposite replica:**
This subclass is indented under subclass 23.01. Subject matter wherein the scribing member produces an opposite curve to the curve traced by the tracing member.
- (1) Note. A symmetrical pattern may be traced by tracing one half of the pattern to produce an opposite half and the remaining half of the pattern is traced to produce the other negative half.
- 23.06 Plural reproduction:**
This subclass is indented under subclass 23.01. Subject matter which includes plural scribing members connected at the same time to the tracing member.
- (1) Note. Devices that duplicate a hand written signature are here.
- 23.07 Pattern grading:**
This subclass is indented under subclass 23.01. Subject matter wherein the scribing member produces a copy of an outline traced by the tracing member which is one of a group of copies which differ from each other not in configuration but the width of the outline.
- 23.08 Pattern follower:**
This subclass is indented under subclass 23.01. Subject matter which includes an outline and the tracing member contacts and moves around the outline to cause the scribing member to reproduce the outline.
- 23.09 Human form:**
This subclass is indented under subclass 23.01. Subject matter wherein the tracing member contacts the surface of a person and causes the scribing member to copy the same surface.
- 23.1 Telautograph:**
This subclass is indented under subclass 23.01. Subject matter wherein the tracing member and the scribing member are each connected to a separate means for describing a line remote from each other.
- 23.11 Template and stylus details:**
This subclass is indented under subclass 23.01. Subject matter which includes a (A) pattern, (B) a tracer member or (C) a scribing member when claimed in more than name only.
- 24.1 Multiplane:**
This subclass is indented under subclass 23.01. Subject matter wherein the tracing member and the scribing member move over different planes.
- 24.2 Pendulum:**
This subclass is indented under subclass 24.1. Subject matter wherein the tracing or the scribing member is mounted on a member pivoted at one end to move in an arc.
- 24.3 Coaxial styli:**
This subclass is indented under subclass 24.1. Subject matter wherein the tracing member and the scribing member have a common axis.
- 25.1 Parallelogram type:**
This subclass is indented under subclass 23.01. Subject matter in which the connection between the tracing and the scribing members comprises four bars pivoted together in substantially the form of a parallelogram.

25.2 Simple parallelogram:

This subclass is indented under subclass 25.1. Subject matter wherein the connection between the tracing and the scribing members is only four pivoted bars forming the parallelogram linkage.

25.3 Universally parallel bar:

This subclass is indented under subclass 25.1. Subject matter wherein a parallel bar of the linkage, the tracer member or the scribing member has movement in addition to the motion caused by the parallelogram pantographic linkage.

25.4 Progressive lettering:

This subclass is indented under subclass 25.1. Subject matter which includes structure to serially contact the tracing member with plurality of symbol patterns used in printing or writing.

25.5 Tandem pantographs:

This subclass is indented under subclass 25.1. Subject matter wherein there are serial parallelogram linkage forming the connection between the tracing member and the scribing member.

26 This subclass is indented under subclass 18. Devices having means designed for producing curved lines and also means designed for producing straight lines.

(1) Note. Patents are not crossed referenced from this subclass to subclass 27 or 32.

27.01 Curved line:

This subclass is indented under subclass 18.1. Subject matter wherein the means for describing a line is designed for producing a line which is not straight.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, for a device describing both straight and curved lines.

558.01, for pivoted opposed contact distance measurers including dividers.

810+, for beam-trammel type distance measurers.

27.02 Compass:

This subclass is indented under subclass 27.01. Subject matter which includes a pivot member and a scribing member rotating about the pivot member with a constant radius.

27.03 Beam type:

This subclass is indented under subclass 27.02. Subject matter wherein a bar connects the pivot member to the scribing member.

27.031 With scoring means:

This subclass is indented under subclass 27.02. Subject matter wherein the marking point is a member that scratches a surface.

SEE OR SEARCH CLASS:

30, Cutlery, subclasses 164.9+ for hand manipulatable device for working by means of cutting.

27.032 Including scale:

This subclass is indented under subclass 27.031. Subject matter wherein the compass has a member with indicia for setting the compass to a desired measurement.

27.033 With screw adjustment means:

This subclass is indented under subclass 27.031. Subject matter having a rotatable threaded member for moving the pivoted member.

27.04 Circle forming frame support:

This subclass is indented under subclass 27.01. Subject matter which includes structure to support a circle scribing device at its pivot point.

27.05 Circle forming roller:

This subclass is indented under subclass 27.01. Subject matter which includes two circular members having different diameters joined by a connecting member to have their centers on a common axis and a scribing member supported by the connecting member.

27.06 Circle forming pin and jointed arm:

This subclass is indented under subclass 27.01. Subject matter which includes two movably connected members having a point at the intersection of the two members used to mark a point on a circle when each member at the same time touches a point on the circle.

27.07 Circle forming rotating table:

This subclass is indented under subclass 27.01. Subject matter which includes a movable support turning about an axis coaxing with the means for describing a line to form a circle.

27.08 Conic section:

This subclass is indented under subclass 27.01. Subject matter wherein the curved line is produced by the intersection of a plane with a right circular cone and is not provided for elsewhere.

27.09 Spiral:

This subclass is indented under subclass 27.01. Subject matter which includes a scribing member continuously circling about a point always increasing in size in a plane.

27.1 Sine curve:

This subclass is indented under subclass 27.01. Subject matter which includes a scribing member moving in a path wherein each point in the path has a "y" coordinate equal to the sine of the angle corresponding to the same point.

27.11 Rose engine:

This subclass is indented under subclass 27.01. Subject matter which includes a device to cause a scribing member to move in the shape of a rosette.

27.12 Pattern follower:

This subclass is indented under subclass 27.01. Subject matter which includes an outline and a tracing member which contacts and moves around the outline to cause a scribing member to produce a curved line.

28 This subclass is indented under subclass 27. Devices designed for describing the outlines of lenses.

29 This subclass is indented under subclass 27. Devices designed for laying out stair curves.

30.1 Ellipsograph:

This subclass is indented under subclass 27.01. Subject matter wherein the curve has a major and a minor axis with two foci on the major axis so that the sum of the distances from each focus to a point on the curve is equal to the length of the major axis.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

27.01+, for nonelliptical curve scribes in which the scribing member is guided around a curved pattern which may or may not be elliptical in form.

30.2 Pivoted circular pattern:

This subclass is indented under subclass 30.01. Subject matter which includes a round outline turnable to fixed positions about its diameter and a tracing member which contacts and moves about the outline at a fixed position to cause a scribe member to move in the shape of an ellipse.

30.3 Pattern follower:

This subclass is indented under subclass 30.1. Subject matter which includes a shaped outline and a tracing member which contacts and moves about the outline to cause a scribe member to move in the shape of an ellipse.

30.4 Harmonic component:

This subclass is indented under subclass 30.1. Subject matter which includes two transverse motion devices connected to the scribing member wherein at least one of the devices is adjustable to vary the length of the minor axis of the ellipse being scribed.

30.5 Flexible cord type:

This subclass is indented under subclass 30.1. Subject matter wherein the means for describing a line includes a string having each string end held to a different focus point on the ellipse to be drawn and scribing member contacts the cord when taut at various positions to form points on the ellipse.

30.6 Sliding leg:

This subclass is indented under subclass 30.1. Subject matter wherein the means for describing a line includes an axis and a member movable in the direction of the axis and simultaneously movable about the axis.

30.7 Planetary scriber arm:

This subclass is indented under subclass 30.1. Subject matter wherein the means for describing a line includes a scribing member on a radius that moves about a first circle while simultaneously moving about a second circle

- so that the scribing member forms an elliptical motion.
- 31** This subclass is indented under subclass 30. Devices comprising two guides at right angles to each other and a scribing member having means to engage the guides.
- 32.1 Straight-line:**
This subclass is indented under subclass 18.1. Subject matter designed for producing (a) a line wherein any two points on the line have the same slope or (b) a figure composed entirely of straight lines.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
26, for straight and curved lines.
403+, for a straight edge.
- 32.2 Portable:**
This subclass is indented under subclass 32.1. Subject matter wherein the means for describing a line or a figure composed of straight lines is constructed to be carried from place to place.
- 32.3 Moving scriber:**
This subclass is indented under subclass 32.1. Subject matter which includes a scribing member that is mounted for movement.
- 32.4 And sheet:**
This subclass is indented under subclass 32.3. Subject matter which includes means to move a sheet into contact with the moving scribing member.
- 32.5 Stationary scriber and moving support or sheet:**
This subclass is indented under subclass 32.1. Subject matter which includes a motionless scribing member and (a) a moving surface to move a sheet into contact with the scribing member or (b) a moving flat surface which moves into contact with the scribing member.
- 32.6 Moving sheet:**
This subclass is indented under subclass 32.5. Subject matter which includes the moving flat surface.
- 32.7 Sheet support and handling details:**
This subclass is indented under subclass 32.1. Subject matter which includes a scribing member and structure to (a) hold a sheet against the force of gravity or (b) manipulate a sheet before, during or after contact with the scribing member.
- 33** This subclass is indented under subclass 32. Devices designed for marking clapboards preparatory to sawing.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
411, for straight edges designed for marking clapboards.
- 34** This subclass is indented under subclass 32. Devices having members adapted to mark with ink.
- 35** This subclass is indented under subclass 34. Devices in which the marking member travels.
- 36** This subclass is indented under subclass 35. Devices which rotate.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
37+, for other rotary straight line markers.
- 37** This subclass is indented under subclass 34. Devices having a rotary marking member.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
36, for traveling rotary markers.
- 38** This subclass is indented under subclass 37. Devices having means whereby the marking is interrupted during a predetermined interval of travel.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
39, for other blank space straight line markers.
- 39.1 Blank space:**
This subclass is indented under subclass 34. Subject matter having means whereby the marking is interrupted during a predetermined interval of travel.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
38, for rotary blank space straight line markers.
- 39.2 Hand pen:**
This subclass is indented under subclass 39.1. Subject matter wherein the marking member is manually operated.
- 40** This subclass is indented under subclass 32. Devices designed for ruling parallel lines having a positive gauge to limit the transfer of the ruling member from line to line.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
450, for straight edges employed as guides in like work.
- 41.1 Parallel line:**
This subclass is indented under subclass 18.1. Subject matter wherein the means for describing lines produces lines at any unvarying distance from each other throughout their length, or at an unvarying distance from a guiding edge or the like.
- (1) Note. While this group of instruments is almost always employed in producing straight lines, still they are not necessarily limited to that use and are therefore not classifiable under the "Straightline" group.
- SEE OR SEARCH CLASS:
15, Brushing, Scrubbing, and General Cleaning, subclass 435 for a pen point or a pen holder.
101, Printing, subclasses 328+ for rolling contact printing implements for making parallel lines having no provision for mechanically guiding the implement.
104, Railways, subclass 244.1 for a vehicle guided for travel parallel to a furrow.
172, Earth Working, subclasses 126+ for an earth working means producing a marking line parallel to a furrow.
401, Coating Implements With Material Supply, subclasses 34+ for plural exposed tools each with individual supply, subclasses 49+ for a pencil or chalk holder and subclasses 258+ for a stylus with coating material supply.
- 41.2 Lettering guide:**
This subclass is indented under subclass 41.1. Subject matter which includes a pattern, per se, to be used with a straight edge for guiding a scribing member to produce lines which determine the height of symbols to be printed.
- 41.3 Rotary marker:**
This subclass is indented under subclass 41.1. Subject matter which includes a scribing member which turns about a pivot point.
- 41.4 Multi-marking:**
This subclass is indented under subclass 41.1. Subject matter which includes a plurality of scribing members.
- 41.5 Profile tracing:**
This subclass is indented under subclass 41.1. Subject matter which includes a contact member to touch point by point a surface shape to be duplicated and a scribing member to duplicate each position point of the contact member.
- 41.6 Single marker with spacing guide:**
This subclass is indented under subclass 41.1. Subject matter which includes a scribing member and a guide connected to the member contacting a scribing surface to steady the member while in use.
- 42** This subclass is indented under subclass 41. Devices designed to be guided by the edge of the material upon which the line or lines are being produced.
- 43** This subclass is indented under subclass 42. Devices in which the edge contacting member is pivotally adjustable with respect to the gauge bar.
- 44** This subclass is indented under subclass 42. Devices having more than one scribing point.
- 45** This subclass is indented under subclass 41. Devices designed to be used on machines, as distinguished from hand instruments.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
34+, for machines for ruling straight lines by the application of ink and which usually carry devices of the type found in this subclass.
- 121** This subclass is indented under the class definition. Subject matter comprising integrating means for determining superficial extent directly.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
1, for planimeter type calculators for determining geometrical properties other than area, such as mean radius, mean square foot radius, and moment of inertia of area.
- SEE OR SEARCH CLASS:
356, Optics: Measuring and Testing, subclasses 627 and 628 for optical area or volume integrators.
- 122** This subclass is indented under subclass 121. Area integrators having a tracing member designed to travel around the outline of the area to be determined, and frequently specially designed to determine effective pressure and horsepower from engine indicator diagrams.
- 123** This subclass is indented under subclass 121. Area integrators having electrically operated mechanism.
- 124** This subclass is indented under subclass 121. Area integrators employing one or more rolling contact distance measurers as a part of the structure.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
129+, and 141+, for rolling contact distance measurers.
- 193** This subclass is indented under subclass 501. Devices designed to determine the form of axles.
- 194** This subclass is indented under subclass 501. Devices designed for fitting doors and windows or their surrounding parts.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
197, for gauges designed for laying out mortises for hinges or locks.
- 195** This subclass is indented under subclass 501. Devices designed for determining the shape of hoofs in preparing shoes for the same.
- 196** This subclass is indented under subclass 501. Devices designed for determining the trueness of millstone faces.
- 197** This subclass is indented under subclass 501. Devices designed for laying out mortise work.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
18+, for scribes designed for this purpose.
- 199** This subclass is indented under subclass 501. Devices designed to determine characteristics of screw thread structure.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
143+, for special contact members used with "opposed contact" instruments for taking the diameter of the threaded bar.
501.7+, for gauges having means to determine the lead angle or spur gearing.
- 200** This subclass is indented under subclass 501. Devices designed to be employed in fitting spectacles.
- SEE OR SEARCH CLASS:
351, Optics: Eye Examining, Vision Testing and Correcting, subclasses 200+ for eye examining and testing instruments.
- 201** This subclass is indented under subclass 501. Devices designed to determine the form of tools.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
626+, for gauges for collocating tools.

- 202** This subclass is indented under subclass 201. Devices designed to determine the form of saws.
- 203** This subclass is indented under subclass 501. Devices designed for determining the form or trueness of wheels.
- 203.1** This subclass is indented under subclass 203. Devices specially constructed for gauging watch wheels.
- SEE OR SEARCH CLASS:
81, Tools, subclass 6 for watchmakers' tools.
- 203.11** This subclass is indented under subclass 203. Devices for determining the shape or contour of a wheel tread.
- 203.12** This subclass is indented under subclass 203. Devices provided with means for supporting the wheels undergoing test.
- 203.13** This subclass is indented under subclass 203.12. Devices in which the supports are rollers or drums.
- 203.14** This subclass is indented under subclass 203.12. Devices in which the supports are pivoted or sliding scuff boards.
- 203.15** This subclass is indented under subclass 203. Devices which contact the axle or wheel and are supported on a base, usually a floor.
- 203.16** This subclass is indented under subclass 203.15. Subject matter for determining the radius of the wheel, or its variation from a plane.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
203.19, for axle vehicle or wheel supported devices.
- 203.17** This subclass is indented under subclass 203.15. Subject matter in which contacting members are slidingly mounted on a beam.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
203.2, 203.21 and 810+, for other trammel type devices.
- 203.18** This subclass is indented under subclass 203. Wheel gauges which are supported by the axle, vehicle or wheel.
- 203.19** This subclass is indented under subclass 203.18. Subject matter having wheel contacting members for determining the radius of a wheel or its variation from a plane.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
203.16, for floor supported devices.
- 203.2** This subclass is indented under subclass 203.18. Subject matter in which contacting members are slidingly mounted on a beam.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
203.17, 203.21 and 810+, for other trammel type devices.
- 203.21** This subclass is indented under subclass 203. Wheel gages having wheel contacting members slidingly mounted on a beam.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
203.17, 203.2 and 810+, for other trammel type devices.
- 227** This subclass is indented under the class definition. Devices or method utilizing nonrefracted light rays and direct sighting for determining the characteristics and the mutual relations of points, lines, angles, surfaces and solids considered as having no properties other than those arising from extension and/or relationship of position or location.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, for a sight line controlled scriber.
- SEE OR SEARCH CLASS:
73, Measuring and Testing, appropriate subclasses for a geometric instrument combined with measuring and testing.

- 356, Optics: Measuring and Testing, appropriate subclasses for an optical geometrical instrument which includes significant optical structure; and see the class definition, section V for the relationship to Class 33.
- 362, Illumination, appropriate subclasses for means for throwing a beam of artificial light in a straight line, including devices in which size of the beam may be varied.
- 378, X-Ray or Gamma Ray Systems or Devices, subclasses 163+ for apparatus for measuring a dimension and/or locating the position by measuring means of an object combined with an X-ray device.
- 396, Photography, subclasses 373+ for light deflecting camera viewfinders.
- 228** This subclass is indented under subclass 227. Method .
- 229** This subclass is indented under subclass 227. Device including means for sighting an object upon which it is desired to drop a bomb or other air dropped projectile and which includes means for determining or compensating for one or more of the following factors; air or ground speed of an aircraft, speed of a moving target, altitude of the craft, angular relation between the course of the aircraft and target, the moment of releasing the bomb, and other fixed or variable factors.
- SEE OR SEARCH CLASS:
- 89, Ordnance, subclasses 1.51+ for devices for holding and releasing bombs, flares and signals from aircraft.
- 102, Ammunition and Explosives, subclasses 382+ for explosive devices designed to be dropped, usually from air or water craft, upon an objective below.
- 434, Education and Demonstration, subclasses 15 and 19+ for training in the use of gun or bomb sights.
- 230** This subclass is indented under subclass 299. Device including gyroscopic means maintaining the equilibrium of the device with respect to a given reference plane.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 318, for a gyroscopically controlled or stabilized direction indicator.
- SEE OR SEARCH CLASS:
- 74, Machine Element or Mechanism, subclasses 5+ for a gyroscope combined with other structure.
- 89, Ordnance, subclass 202, for an ordnance type gun sight including a gyroscope.
- 231** This subclass is indented under subclass 229. Device including means for measuring and indicating the velocity of the moving craft with respect to the ground.
- SEE OR SEARCH CLASS:
- 73, Measuring and Testing, subclasses 488+ for a device there provided responsive to a speed condition.
- 232** This subclass is indented under subclass 227. Device for use with an aerial or marine craft for measuring and indicating the velocity of the moving craft with respect to the ground or a fixed object.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 231, for an aircraft ground speed indicator combined with an aerial bomb sight.
- SEE OR SEARCH CLASS:
- 73, Measuring and Testing, subclasses 488+ for a device there provided responsive to a speed condition.
- 262** This subclass is indented under subclass 227. Device which is supported from or related to some part of a user's body.
- 263** This subclass is indented under subclass 227. Device installed in or mounted upon a device performing a function external to the subject matter of this class, the installation being made in such a manner as not to interfere with the normal operation of the device.
- 264** This subclass is indented under subclass 263. Device installed in or mounted upon a vehicle.

- 265** This subclass is indented under subclass 263. Device installed or mounted upon a archer's bow.
- SEE OR SEARCH CLASS:
124, Mechanical Guns and Projectors, for an archery bow and a sighting means therefor.
- 266** This subclass is indented under subclass 263. Device installed or mounted upon a camera.
- SEE OR SEARCH CLASS:
396, Photography, subclasses 373+ for light deflecting camera viewfinders.
- 267** This subclass is indented under subclass 227. Device including means for transmitting the determination to a distant indicator or recorder.
- SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 870.01+ for telemetric means, per se, comprising electrical transmitting means in combination with means designed to be located at a distance having a movable indicator electrically controlled by the transmitter but not limited to any particular instrument.
- 268** This subclass is indented under subclass 227. Device including means for locating the position of a heavenly body or means by which an observer may determine his own geos:graphic location by direct observation of the heavenly body.
- 269** This subclass is indented under subclass 268. Device including means whereby the time of day may be determined.
- SEE OR SEARCH CLASS:
368, Horology: Time Measuring Systems or Devices, appropriate subclasses for time measuring instruments, per se.
- 270** This subclass is indented under subclass 269. Device including an element which by the position or length of its shadow cast upon a dial or surface indicates the time of day.
- 271** This subclass is indented under subclass 270. Device including means responsive to an external magnetic field, usually that of the earth, for indicating direction.
- 272** This subclass is indented under subclass 227. Device including means responsive to an external magnetic field, usually that of the earth, for indicating direction.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
300+, for a direction indicator, per se, responsive to an external magnetic field.
- 273** This subclass is indented under subclass 272. Device including means responsive to terrestrial gravitation for indicating deviation from a horizontal or vertical plane.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
365+, for a level or plumb, per se.
- 274** This subclass is indented under subclass 227. Device having a marker, rule, protractor, square or the like adapted to be used in plotting or in forming geometrical figures on a map or chart, the sides and angles of which correspond to various positions and angles taken by the sighting instrument.
- SEE OR SEARCH CLASS:
33, Geometrical Instruments, subclasses 75+ for a straight edge type geometric instrument.
- 275** This subclass is indented under subclass 227. Device comprising a device in addition to or combined with the straight line light ray type instrument (1) having functions other than determining the characteristics or mutual relations of points, lines, angles, surfaces and solids or (2) serving to perfect the instrument for its intended function.
- 276** This subclass is indented under subclass 227. Device including a plurality of means for directing the eye of an observer along different lines of sight without adjustment of parts.

- SEE OR SEARCH CLASS:
42, Firearms, subclass 141, for similar type gun sight.
- 277** This subclass is indented under subclass 276. Device in which the different lines of sight are taken from the same sight directing means.
- 278** This subclass is indented under subclass 276. Device wherein at least one of the sight directing means may be moved or adjusted with respect to another.
- 279** This subclass is indented under subclass 278. Device wherein the sight directing means are movable both about an axis and in a straight line relative to each other.
- 280** This subclass is indented under subclass 278. Device wherein each sight directing means may be moved or adjusted independently of another.
- 281** This subclass is indented under subclass 227. Device for measuring both an angle which is in a plane perpendicular to the plane of the horizon and an angle which is in the plane of or parallel to the horizon.
- 282** This subclass is indented under subclass 227. Device for measuring an angle which is in a plane perpendicular to the plane of the horizon.
- 283** This subclass is indented under subclass 282. Device wherein the magnitude of the angle is measured by means of a gravity actuated or pendulous indicating means.
- 284** This subclass is indented under subclass 282. Device including means for determining the distance from the instrument.
- 285** This subclass is indented under subclass 227. Device for measuring an angle in the plane of or parallel to the horizon.
- 286** This subclass is indented under subclass 227. Device including means for positioning, or determining the position of, one object with respect to another; e.g., tool and work piece or a part of an object with respect to another part, e.g., shaft.
- 287** This subclass is indented under subclass 286. Device comprising means for aligning railway track.
- 288** This subclass is indented under subclass 286. Device for positioning or determining the position of automotive wheels, headlamps or frame parts with respect to each other.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
228, for methods for positioning or determining the position of automotive components.
- 289** This subclass is indented under subclass 286. Device comprising means for locating a ball longitudinally of a playing field with reference to a previous location of the ball on the field.
- 290** This subclass is indented under subclass 227. Device comprising a sighting instrument including means; e.g., bubble in a liquid, or pendulum, to indicate and/or effect adjustment to the horizontal of the line of sight of the device.
- (1) Note. Included in this and indented subclass are devices for determining the difference in altitude between two points but provided with no angle measuring scales.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
282, for a vertical angle measurer.
365+, for a level, per se.
- 291** This subclass is indented under subclass 290. Device wherein adjustment to the horizontal is effected by means requiring no manual handling of the device; e.g., means responsive to terrestrial gravitation.
- 292** This subclass is indented under subclass 290. Device wherein the sighting means comprises an elongated tubular housing which may be provided with a lens.
- SEE OR SEARCH CLASS:
42, Firearms, subclass 119, for a telescopic type gun sight.

293 This subclass is indented under subclass 227. Device comprising (1) a graduated rod useable in conjunction with a surveyor's instrument located at a point remote from the rod for measuring the vertical distance between a point on the ground and the line of sight of the instrument or (2) other devices; e.g., target, usable in conjunction with the instrument to distinguish the terminal end of the line of sight.

294 This subclass is indented under subclass 293. Device wherein the rod includes means permitting the difference in elevation between the two points to be read directly from the rod without computation.

295 This subclass is indented under subclass 293. Device including means responsive to terrestrial gravity for use in aligning the rod vertically or horizontally with respect to a defined reference point.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

365+, for a level or plumb, per se.

296 This subclass is indented under subclass 293. Device wherein the rod comprises a plurality of slideably or telescopically connected sections which may be longitudinally adjusted relative to each other.

297 This subclass is indented under subclass 227. Device including a system of lines, dots, cross hairs or the like in the focal plane of the device.

298 This subclass is indented under subclass 297. Device wherein the lines, cross hairs or the like may be displaced or selectively moved relative to each other.

SEE OR SEARCH CLASS:

42, Firearms, subclass 122, for a telescopic gun sight having an adjustable reticle.

299 This subclass is indented under subclass 227. Device comprising means for mounting the device upon a supporting structure for supporting the device against the pull of gravity.

SEE OR SEARCH CLASS:

42, Firearms, subclass 124, for means for mounting or supporting a telescopic type gun sight upon a gun.

248, Supports, appropriate subclasses for supports of more general application, especially subclasses 163.1+ for a plural leg support, e.g., tripod and subclasses 176+ for means for supporting an article on a stand.

300 This subclass is indented under the class definition. Device or method for indicating a direction related to that of some force (e.g., magnetic field, gravity etc.), of the type which will pass through a natural media (e.g., air, earth, water), the media apparently being passive to such passage, and not elsewhere classified.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

355+, for an instrument there provided for having, as a perfecting feature, an indicator of direction of force traversing natural media.

SEE OR SEARCH CLASS:

73, Measuring and Testing, subclasses 178+, for navigating instruments in general, and subclasses 170.01+ for indicators of directions of fluid flow.

74, Machine Element or Mechanism, subclass 5.22 as the generic place for gyroscopes combined with other structures.

324, Electricity: Measuring and Testing, subclass 244 for devices for determining magnetic field strength and for devices generic to the determination of, or the determination of both, magnetic field strength and direction.

434, Education and Demonstration, subclasses 111, 186, and 239+ for devices for instructing or training in the use of direction indicators, including devices for simulating compasses and for simulating their performance under conditions encountered in actual use.

301 This subclass is indented under subclass 300. Process.

- 302** This subclass is indented under subclass 301. Process involving the study of the interior of a borehole or tube.
- SEE OR SEARCH CLASS:
- 73, Measuring and Testing, subclasses 152.01+ for borehole testing, per se, and subclass 152.57 for a borehole casing study, per se, wherein the test is not purely electrical or purely magnetic.
- 166, Wells, subclasses 250.01+ for processes there provided for including indicating testing, measuring, or locating.
- 303** This subclass is indented under subclass 301. Device for coordinating a plurality of variables in a directional indicator system by a mathematical process, e.g., computing, or by matching one variable against another; such as found in gyroscopically controlled directional indicators.
- 304** This subclass is indented under subclass 300. Device comprising means for determining the bearing, or deviation from the vertical, of a deep hole in the earth, such as well bores.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 302, for processes used in determining the direction or inclination of boreholes.
- SEE OR SEARCH CLASS:
- 73, Measuring and Testing, subclasses 152.01+ for means for measuring or testing other physical conditions of well bores.
- 175, Boring or Penetrating the Earth, subclass 44 for a process or means for determining the orientation of a core sample, while in situ, combined with a step or means for cutting the core and subclass 45 for a process or means to determine the direction or inclination of an earth boring tool located in a bore hole combined with more than a nominally recited boring step or nominally recited boring apparatus.
- 340, Communications: Electrical, subclass 853.8 for a wellbore telemetering system having orientation sensing of the subsurface equipment.
- 305** This subclass is indented under subclass 304. Device wherein said determining means includes a liquid which reacts with or makes an impression on a cylinder or platen to record the deviation of the borehole.
- 306** This subclass is indented under subclass 304. Device wherein the borehole direction or inclination indicator reacts to or is controlled by the presence or motion of a fluid within the borehole.
- 307** This subclass is indented under subclass 306. Device wherein the inclination of the borehole is interpreted from pressure changes in the drilling fluid at the borehole outlet or from generated pressure surges in the drilling fluid.
- SEE OR SEARCH CLASS:
- 73, Measuring and Testing, subclasses 37+ for measuring and testing means utilizing fluid pressure.
- 367, Communications, Electrical: Acoustic Wave Systems and Devices, subclasses 81+ for wellbore acoustic wave telemetering, per se.
- 308** This subclass is indented under subclass 304. Device including a pendulum for determining inclination and further including means for marking a surface to give a permanent record of the inclination, and wherein said marking means is carried by or guided by the pendulum.
- 309** This subclass is indented under subclass 308. Device wherein the marking means includes (1) wave energy transmitted through a natural media and guided through the pendulum to the record surface or (2) an electrically conducting point on the pendulum which produces a marking spark between the pendulum and record surface or marks the record surface by electrolysis.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 314, for other radiant energy produced marking.

- 310** This subclass is indented under subclass 308. Device provided with means influenced by a magnetic field to determine the bearing of the well bore.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
313, for other borehole inclination and directional indicators.
355, for magnetic indicators in general.
- 311** This subclass is indented under subclass 308. Device wherein the record surface is normally spaced from the pendulum marker and wherein means is provided for imparting movement to the record surface to move the record surface into engagement with the pendulum marker.
- 312** This subclass is indented under subclass 304. Device including an electrical telemetering circuit for transmitting an indication of the direction or inclination of the borehole to a receiver.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
363, for electrical telemetering circuits utilized in magnetic field responsive devices and see the search notes thereto for the loci of other electrical telemetering circuits in this class.
- SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 853.1+ for borehole electrical telemetric means, per se.
- 313** This subclass is indented under subclass 304. Device including means for determining both the bearing of the borehole and the deviation of the borehole from the vertical.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
310, for a borehole pendulum inclinometer and magnetic heading indicator.
351+, for other plural directional indicators.
- 314** This subclass is indented under subclass 304. Device provided with a record member (film) which reacts to light to produce an optical counterpart of the direction or inclination indicator, or an optical impression of the orientation of the indicator.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
309, for a pendulum directed radiant energy marker.
- 315** This subclass is indented under subclass 300. Device including means responsive to a change in temperature, the responder influencing the indication.
- (1) Note: Provision for the accommodation of change in size, due to change in temperature, has not been placed in this subclass unless it effects the indication. For instance, a bubble level including means to accommodate a change in liquid volume with change in temperature, so that the bubble may remain substantially constant in size, is in this subclass while a liquid buoyed magnetic needle type compass with similar liquid expansion provision will be found in subclass 364.
- 316** This subclass is indented under subclass 300. Device wherein a magnetic field sensitive device (compass, flux valve) is utilized to monitor a directional gyroscope by orienting the gyroscope in the direction of the magnetic meridian.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
318+, for a gyroscopically controlled or stabilized directional indicator, especially subclass 319 for a magnetic compass which is controlled or stabilized by a gyroscope.
- 317** This subclass is indented under subclass 316. Device including an electrical telemetering circuit.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
363, for electrical telemetering circuits there provided for.
- 318** This subclass is indented under subclass 300. Device including a gyroscope utilized to (1) indicate direction or (2) maintain the equilibrium of a directional indicator or datum structure with respect to a reference plane (plurality of coordinates).

- SEE OR SEARCH CLASS:
- 73, Measuring and Testing, subclasses 504.02+ for a gyroscope combined with a speed responsive device.
- 74, Machine Element or Mechanism, subclasses 5+ for special features of gyroscope, per se, and especially subclass 5.22 as the generic place for gyroscopes combined with other structure.
- 114, Ships, subclasses 21.1 and 24 for gyroscopically controlled torpedo steering mechanism, subclass 122 for gyroscopic antirolling stabilizers combined with ships, and subclass 144 for gyroscopic controlled steering.
- 244, Aeronautics, subclass 79 for gyroscope actuated automatic aircraft control.
- 318, Electricity: Motive Power Systems, subclasses 18+ for gyroscope actuated follow-up systems of electric motor control and subclass 489 for automatic motor control in response to direction.
- 319** This subclass is indented under subclass 318. Device wherein a directional indicator influenced by an external magnetic field is additionally controlled or stabilized by the gyroscope.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 316, for a directional gyroscope controlled by a magnetic compass.
- 355+, for a magnetic compasses, per se.
- 320** This subclass is indented under subclass 318. Device wherein the gyroscopic means is used to indicate the latitude or longitude of the point on the earth's surface occupied by the gyroscope.
- 321** This subclass is indented under subclass 318. Device comprising two or more gyroscopes.
- SEE OR SEARCH CLASS:
- 74, Machine Element or Mechanism, subclass 5.34 for special features of plural gyroscopes, per se.
- 322** This subclass is indented under subclass 321. Device including means for indicating two or more different directions (e.g., heading and attitude).
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 328+, for a single gyroscope combined with plural attitude indications.
- 351+, for other diverse directional indicators.
- 323** This subclass is indented under subclass 321. Device wherein one of said gyroscopes is utilized to indicate direction and another of said gyroscopes is utilized to apply a correcting or controlling force to a component of said first gyroscope or said first gyroscope system to maintain the equilibrium thereof.
- 324** This subclass is indented under subclass 318. Device in which one or more gyroscopic rotors are arranged to seek a known direction relative to the meridian as by precession induced by couples applied directly as indirectly through the action of gravity.
- 325** This subclass is indented under subclass 324. Device including means to transmit the direction indication from the gyroscope to an indicator separated from the gyroscope, usually a repeater compass.
- 326** This subclass is indented under subclass 324. Device provided with means to compensate for forces or disturbances causing deflection in the meridian seeking action of the gyroscope by presetting the compensating means to a desired position. Included in this subclass are adjustable means for correcting the readings of such compasses for errors due to the speed, course or latitude of the craft on which they are carried.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 356+, for correcting devices for magnetic field responsive indicators.
- 327** This subclass is indented under subclass 324. Device including fluid means for (1) wholly or partially supporting the gyroscope components or (2) applying a force to the gyroscope, as in

- the air jet controlled type or the liquid ballistic type of gyroscope.
- 328** This subclass is indented under subclass 318. Device wherein the gyroscopic means is used to indicate, with respect to a horizontal plane, the extent of right or left tilt of a craft or upward or downward tilt of a craft on which the gyroscope is mounted.
- SEE OR SEARCH CLASS:
73, Measuring and Testing, subclasses
488+ for attitude indicators combined with speed responsive devices.
- 329** This subclass is indented under subclass 328. Device including an indicator comprising a pivotally mounted rigid arm, and a background member for the indicator, and wherein both said rigid arm indicator and background member are connected to components of the gyroscope.
- 330** This subclass is indented under subclass 328. Device wherein the gyroscopic indicator is in the form of a sphere or a segment thereof.
- 331** This subclass is indented under subclass 300. Device having means for making a discrete record of the sensed direction.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
304+, for borehole direction or inclination indicators, many of which include a recorder.
- 332** This subclass is indented under subclass 300. Device combined with means for making a visible sign, impression or tracing on a surface.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
305, for a liquid used in marking borehole direction.
308, for a pendulum mounted or directed marker used with borehole indicators.
- 333** This subclass is indented under subclass 300. Device including means relating it to a peculiarity of a device serving some function other than that of indicating direction.
- 334** This subclass is indented under subclass 333. Device related to a portable implement designed to be held by a person while it performs its intended function.
- 335** This subclass is indented under subclass 300. Device particularly adapted for cooperation with the running gear, or with the headlights, of a vehicle for determining a deviation (e.g., caster and/or camber angle, headlight alignment) thereof from the horizontal or vertical.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
203+, for other vehicle wheel alignment gauges.
288, for a vehicle chassis, running gear, or head lamp, alignment device utilizing a straight line light ray instrument.
- 336** This subclass is indented under subclass 335. Device supported entirely by a wheel, or wheels, of the vehicle.
- 337** This subclass is indented under subclass 335. Device supported entirely by an axle, or axles, of the vehicle.
- 338** This subclass is indented under subclass 300. Device provided with means for determining the gauge and level of a railway track.
- 339** This subclass is indented under subclass 300. Device having combined therewith a cord, or a cord holder, adapted, when stretched tight, to form a straight line guide member.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
353, for the combination of a bubble level and a plumb line, both of which fall within the class definition, wherein the plumb line may also serve as a vertical straight line guide.
392+, for a plumb line which may also serve as a vertical straight line guide.
- 340** This subclass is indented under subclass 300. Device having combined therewith means for simultaneously measuring an extent in two or more directions or measuring a nonlinear shape.

- 341** This subclass is indented under subclass 340. Device including means for measuring an angle.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
343, for a direction indicator combined with angle or shape determination.
- 342** This subclass is indented under subclass 300. Device having combined therewith means for making a linear determination, this means being independent of the determination of direction.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
375, for a level or plumb having relatively moveable reference surface sections wherein the relative position is related to the direction being determined. Linear indicia may be utilized to indicate the relative position of the sections.
- 343** This subclass is indented under subclass 300. Device combined with means for determining an angle or a non-linear shape.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
341, for a direction indicator combined with both an angle indicator and plural distance measurers.
- 344** This subclass is indented under subclass 300. Device having means whose function is to dampen, or otherwise control the rate of motion of, the direction sensing and/or indicating portion thereof.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
355+, for a magnetic compass having means to latch the magnetic needle in a fixed position.
368, for a level or plumb having means to latch the direction indicator in a fixed position.
- 345** This subclass is indented under subclass 344. Device wherein the damping means includes a generator of a magnetic field.
- 346** This subclass is indented under subclass 344. Device wherein the damping means includes a fluid and means on, or actuated by, the direction sensing and/or indicating portion coacting with the fluid.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
327, for fluid supported, gyroscopic compass components, the fluid producing a damping effect.
364, for a magnetic compass including a liquid buoyed magnetic needle, the liquid producing a damping effect.
396, for a liquid buoyed pendulum, the liquid producing a damping effect.
- 347** This subclass is indented under subclass 300. Device provided with means for mounting a directional indicator on an object or supporting member by (1) glue or other viscous substance, (2) the force of magnetism, or (3) atmospheric pressure acting on the indicator by reason of a reduced pressure beneath the indicator.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
370+, for other means for attaching a level or plumb to the work.
- SEE OR SEARCH CLASS:
248, Supports, subclasses 205.5+ and 309.3 for vacuum mounted brackets and 206.5 and 309.4 for magnetic mounted bracket.
- 348** This subclass is indented under subclass 300. Device having means to assist the person viewing the indicating portion of the device, said means including either an illuminator, (e.g., lamp, fluorescent paint, etc.), an illumination director (e.g., mirror) or an optical viewer (e.g., magnifying lens, microscope, etc.).
- (1) Note. An illuminator, illumination director, or optical viewer used as a part of a telemetering system (e.g., electric eye system) or as the indicator (e.g., oscilloscope) will be found in the appropriate subclasses below.

SEE OR SEARCH CLASS:

362, Illumination, appropriate subclasses for the combination of an illuminator and some other device wherein no novelty of the other device is indicated.

348.2 This subclass is indented under subclass 348. Subject matter wherein the illuminator is electrically powered and the device is a spirit level.

349 This subclass is indented under subclass 300. Device having means, in addition to the force responsive direction indicator, which is selectively positioned to indicate the desired orientation of some structure with respect to the indicated direction of the force.

350 This subclass is indented under subclass 300. Device having added thereto means to shelter all or part thereof, to cushion the device as a whole, or to otherwise protect the device from physical damage.

(1) Note. Included in this subclass are such things as storage casings and covers and shock absorbing work attaching means. Shock absorbing features within the device, such as fluid supported direction sensors (see subclasses 327, 346+, 364, and 396), have not been placed here since they affect the device in its use and are thus an essential part thereof rather than being combined therewith.

351 This subclass is indented under subclass 300. Device provided with (1) two different types of directional indicators, or (2) two different kinds of the same type, e.g., bubble and float.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

313, for means for indicating the inclination and direction of boreholes.

322, for diverse indicators controlled by plural gyroscopes.

352 This subclass is indented under subclass 351. Device wherein one of the directional indicators is influenced by an external magnetic field (e.g., combined magnetic compasses and inclinometers).

SEE OR SEARCH THIS CLASS, SUB-CLASS:

310, for a pendulum inclinor and a magnetic heading indicator for boreholes.

313, for inclination and direction indicators for boreholes.

355+, for magnetic compasses, per se.

353 This subclass is indented under subclass 351. Device wherein one of the directional indicators is a pendulum weight suspended by a flexible line and another directional indicator is a bubble formed in a closed receptacle, nearly filled with liquid.

354 This subclass is indented under subclass 300. Device, (1) combined with subject matter of another class or (2) united with a second device, said second device having a function serving to perfect the class device for its intended function.

355 This subclass is indented under subclass 300. Device comprising means influenced by an external magnetic field, usually that of the earth, and either (1) indicating a direction or deviation from a direction, related to that of the field or (2) controlling a telemetering system to an indicator of such direction or deviation.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

310, for a magnetic compass supported on a pendulum for use in a borehole.

313, for means indicating inclination and direction, usually magnetic, of a borehole.

316+, for a gyromagnetic compass.

319, for a gyroscopically stabilized magnetic compass.

352, for a magnetic compass combined with a different directional indicator.

SEE OR SEARCH CLASS:

324, Electricity: Measuring and Testing, subclass 259 for testing a magnetic field by using a permanent magnet (e.g., compass needle).

335, Electricity: Magnetically Operated Switches, Magnets, and Electromagnets, subclasses 302+ for permanent magnets of a particular structure or material.

- 356** This subclass is indented under subclass 355. Device including means for indicating the amount of, preventing the effect of, or compensating for the effect of some force other than that of the magnetic field under investigation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
344+, for a direction sensing indicator having means to dampen, or otherwise govern, motion of the sensor.
- SEE OR SEARCH CLASS:
368, Horology: Time Measuring Systems or Devices, subclass 293 for somewhat similar structures employed on watches and the like.
- 357** This subclass is indented under subclass 356. Device wherein the means prevents the extraneous force from affecting the magnetically influenced means by either absorbing said extraneous force or providing an opposing force of an equal amount.
- 358** This subclass is indented under subclass 357. Device wherein a permanent magnet is utilized to produce the opposing force.
- 359** This subclass is indented under subclass 358. Device wherein the permanent magnet is supported for pivotal or swinging movement.
- 360** This subclass is indented under subclass 355. Device wherein either the means influenced by the magnetic field, the telemetering system, or the indicator includes a cathode-ray tube projecting a deflectable electron beam, the deflection being related to the direction or deviation.
- SEE OR SEARCH CLASS:
324, Electricity: Measuring and Testing, subclass 250 for testing a magnetic field by a cathode ray beam.
- 361** This subclass is indented under subclass 355. Device wherein the means influenced by the external magnetic field is either an electromagnet (e.g., electromagnetic compass needle) or an inductor (e.g., armature, flux valve, flux gate, etc.).
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
363, for a magnetic compass utilizing an electromagnet or an inductor in a telemetering circuit.
- 362** This subclass is indented under subclass 361. Device including an inductor, i.e., armature and means to rotate it, or to vibrate it, through the magnetic field under investigation.
- 363** This subclass is indented under subclass 355. Device including an electrical telemetering circuit.
- (1) Note. The combinations of telemetric signaling means with measuring means of the type provided for, are in this class (33).
- SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 870.01+ for telemetric means, per se, comprising electrical transmitting means in combination with means designed to be located at a distance having a movable indicator electrically controlled by the transmitter but not limited to any particular instrument.
- 364** This subclass is indented under subclass 355. Device wherein the means influenced by the external magnetic field is a magnetic element (i.e., compass needle) partially or wholly supported by a liquid.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
346+, for a liquid buoyed compass needle having means secured thereto, or operated thereby, for the sole purpose of cooperating with the liquid to produce a damping effect.
- 365** This subclass is indented under subclass 300. Device responsive to terrestrial gravitation and establishing either a horizontal or a vertical direction.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

401, for a magnetic output coupling for a nonelectrical pendulum type level.

366.11 Electrically actuated signal or indicator:

This subclass is indented under subclass 365. Subject matter including means producing a humanly perceptive signal to a flow of electron, an element responsive to terrestrial gravitation, and wherein the terrestrial gravitation responsive element controls the humanly perceptive signal.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

312, for a borehole direction or inclination device including electrical telemetering of the sensed condition.

SEE OR SEARCH CLASS:

340, Communications, Electrical, subclass 853.8 for an arrangement for borehole condition telemetering combined with telemetering equipment orientation sensing.

366.12 Plural nonparallel axes or plural orientation sensors:

This subclass is indented under subclass 366.11. Subject matter which (1) is responsive to relative rotation or inclination about plural nonparallel axes or (2) has multiple distinct circuit controlling gravity responsive elements (i.e., orientation sensors).

366.13 With compensation of sensed quantity (e.g., acceleration):

This subclass is indented under subclass 366.11. Subject matter combined with an arrangement (1) for sensing an undesirable physical quantity which would otherwise produce an error in the electrical signal or indicator, and (2) for modifying an electrical angle or level signal so as to nullify variation in the electrical signal and indicator caused by the sensed quantity.

(1) Note. The term "arrangement" as used in this and its indented subclasses refers to either a device or a subcombination of a device for performing the claimed function.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

315, for this subject matter with temperature compensation.

366.14 With pulse or digital processing circuit component:

This subclass is indented under subclass 366.11. Subject matter including circuitry having means for controlling the indicator in order to process a portion of a signal in the form of abrupt variations of an electrical signal level.

SEE OR SEARCH CLASS:

341, Coded Data Generation or Conversion, subclasses 1+ for a digital code generating pattern reader of general utility.

702, Data Processing: Measuring, Calibrating, or Testing, subclasses 150 through 154 for determination of orientation using specific data processing.

366.15 Fluent sensor:

This subclass is indented under subclass 366.11. Subject matter wherein the gravity responsive element is a volume of flowable material.

(1) Note. The presence of fluid solely for a perfecting mechanical function of an otherwise operable solid sensor, e.g., damping of a pendulum, will be classified in the appropriate subclass containing such a sensor and not in this or its indented subclasses.

366.16 Having light or radiant energy detecting circuit control element:

This subclass is indented under subclass 366.15. Subject matter including a circuit control element and wherein the control element is responsive to radiation incident thereon after passage through some portion of the fluent material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

366.23, for this subject matter wherein the control element is not located in a fluid.

SEE OR SEARCH CLASS:

356, Optics, Measuring and Testing, subclass 139.1 for producing a quantitative indication of angle of inclination from level or vertical by optical photodetection.

366.17 Having buoyant circuit control element:

This subclass is indented under subclass 366.15. Subject matter wherein the fluent sensor having a solid element supported by the fluent material.

366.18 Having fluent material reactive circuit control element (e.g., inductive):

This subclass is indented under subclass 366.15. Subject matter in which the fluent material forms a portion of a reactive circuit component.

366.19 Capacitive sensor:

This subclass is indented under subclass 366.18. Subject matter in which the fluent material reactive circuit component is capacitive.

SEE OR SEARCH CLASS:

361, Electricity: Electrical Systems and Devices, subclasses 280+ for a condition responsive capacitor sensor.

366.21 Having resistive or contact circuit control element:

This subclass is indented under subclass 366.15. Subject matter wherein the fluid material (1) forms a resistive component of, or (2) completes the indicator controlling electric circuit.

SEE OR SEARCH CLASS:

200, Electricity: Circuit Makers and Breakers, for pertinent subclass(es) as determined by schedule review.

338, Electrical Resistors, subclasses 80+ for a mechanically variable resistor having a liquid resistance element.

366.22 By multiple circuit paths through conductive fluid:

Subject matter under 366.21 having plural current paths between conductors through a conductive field.

(1) Note. Such plural paths may be either alternative or simultaneous and require three or more contact conductors.

366.23 Having light or radiant energy detecting circuit control element:

This subclass is indented under subclass 366.11. Subject matter including a circuit control element and wherein the control element is responsive to radiation incident thereon after passage through some portion of the fluent material.

SEE OR SEARCH THIS CLASS, SUBCLASS:

366.16, for this subject matter wherein the control element is, or is located in a fluid.

SEE OR SEARCH CLASS:

356, Optics: Measuring and Testing, subclass 139.1 for producing a quantitative indication of angle of inclination from level or vertical by optical photodetection.

366.24 Having pendulum sensor:

This subclass is indented under subclass 366.11. Subject matter wherein the element executes gravity responsive motion about an axis and is supported so as to be free to swing to a position wherein (1) its center of gravity, or (2) its center of buoyancy is utilized to determine the vertical.

(1) Note. The gravity responsive motion is generally oscillatory or rotary.

SEE OR SEARCH THIS CLASS, SUBCLASS:

391+, for a nonelectrical pendulum controlled indicator.

366.25 Having reactive circuit control element (e.g., inductive, capacitive):

This subclass is indented under subclass 366.11. Subject matter wherein the control element forms a gravity responsive reactive impedance.

366.26 Having reactive or contact circuit control element:

This subclass is indented under subclass 366.11. Subject matter wherein the control element (1) forms a resistive component of, (2) completes the indicator controlling electric circuit.

366.27 Indicator details:

This subclass is indented under subclass 366.11. Subject matter where significance is attributed to the indicator.

- (1) Note. This subclass includes specific circuitry to provide desired effects (e.g., pulsed or steady indication, bright or dim) as well as structure.

SEE OR SEARCH CLASS:

340, Communications: Electrical, subclasses 815.4+ for a specified visual indicator and circuitry or general utility; subclasses 384.1+ for a specified audible indicator and circuitry of general utility.

367 This subclass is indented under subclass 365. Device including separable, independently movable liquid containers interconnected by a liquid conductor, the upper surfaces of the liquid in the containers establishing a horizontal direction.

SEE OR SEARCH THIS CLASS, SUBCLASS:

377+, for other liquid levels utilizing the upper surface of the liquid.

368 This subclass is indented under subclass 365. Device including means for securing the direction indicator in a fixed position.

SEE OR SEARCH THIS CLASS, SUBCLASS:

344+, for means including a portion whose function is to resist, or otherwise govern, motion of the direction sensor.

369 This subclass is indented under subclass 365. Device including, or adapted to cooperate with, a line in such a manner as to indicate when the line is horizontal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

373, for a level or plumb provided with a clamp, loop or strap for encircling attachment to a workpiece.

370 This subclass is indented under subclass 365. Device including means adapted for attachment to a workpiece or to a person handling a workpiece.

SEE OR SEARCH THIS CLASS, SUBCLASS:

333, for a force responsive direction indicator installed in a device performing some disparate function, the relationship of the indicator to the device going beyond a mere supporting relationship.

371 This subclass is indented under subclass 370. Device adapted for attachment to the workpiece without any modification thereof.

- (1) Note. Nails and screws modify the workpiece.

372 This subclass is indented under subclass 371. Device wherein the attaching means includes an elastic member exerting a yieldable clamping force upon the workpiece or workman.

373 This subclass is indented under subclass 371. Device wherein the attaching means includes a part encompassing the workpiece.

374 This subclass is indented under subclass 365. Device including a plurality or relatively moveable members, each having a surface adapted for simultaneous contact with a workpiece, and which surfaces together determine that direction of the workpiece which is to be related to the level or plumb.

375 This subclass is indented under subclass 374. Device wherein the members are moveable in such a manner, that an imaginary line between the workpiece contact surfaces thereof will be shifted in its relationship to the level or plumb during such movement.

- 376** This subclass is indented under subclass 365. Device including a surface for cooperation with a workpiece to determine a direction thereof, the surface involving several separable parts which cooperate to enlarge or diminish the effective surface by adding on, taking away, or substituting parts.
- 377** This subclass is indented under subclass 365. Device including a body of liquid having an upper surface indicative of terrestrial gravitational direction, this upper surface either serving to indicate or to control an indicator.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 304+, for congealing or solidifying substance used to determine borehole inclination.
- 367, for a level of the plural, interconnected, separable, liquid columns type.
- 396, for a pendulum type of level or plumb wherein liquid is utilized for its buoyant effect in supporting the pendulum.
- 378** This subclass is indented under subclass 377. Device wherein an element is supported by the liquid, the element serving to indicate or to control an indicator.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 396, for a level or plumb indicator of the pendulum type wherein the pendulum is wholly or partially supported by liquid.
- 379** This subclass is indented under subclass 377. Device wherein the liquid is within, and nearly filling, a closed receptacle, sufficient space being left superjacent the upper surface of the liquid to simulate a bubble.
- 380** This subclass is indented under subclass 379. Device provided with means for quantitatively changing the bubble simulating space.
- 381** This subclass is indented under subclass 379. Device including a plurality of said nearly filled receptacles.
- 382** This subclass is indented under subclass 381. Device wherein the two nearly filled receptacles are so related that they function simultaneously and at an angle to each other, thus determining two horizontal lines which in turn determine a horizontal plane.
- 383** This subclass is indented under subclass 381. Device wherein the receptacles are adjustable in their relationship to each other.
- 384** This subclass is indented under subclass 379. Device wherein the nearly filled receptacle is supported by a member having a surface of reference, usually adapted to be placed against a workpiece, the support being such as to provide for adjustment of the receptacle with respect to said surface.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 374+, for a level of plumb having relatively movable, coacting reference surface sections.
- 385** This subclass is indented under subclass 384. Device including a cam (e.g., screw thread, gear, wedge, etc.) for controlling the amount of adjustment.
- 386** This subclass is indented under subclass 385. Device including a resilient member exerting its force in opposition to one direction of motion of the cam.
- 387** This subclass is indented under subclass 385. Device provided with means on the receptacle and the member for indicating the relative position of adjustment.
- 388** This subclass is indented under subclass 384. Device provided with means on the receptacle and the member for indicating the relative position of adjustment.
- 389** This subclass is indented under subclass 379. Device wherein the nearly filled receptacle is supported by a member having a surface of reference, usually adapted to be placed against a work piece, the member having thereon indicia for cooperating with the bubble to indicate the position thereof with respect to the reference surface.

- 390** This subclass is indented under subclass 379. Device wherein the receptacle is so shaped as to either (1) define a level plane as distinguished from a level (horizontal) line or (2) have two separate and distinct sections for cooperation with the bubble, usually one section to indicate level and the other to indicate plumb.
- 391** This subclass is indented under subclass 365. Device wherein the responsive portion is a body, so supported as to be free to swing to a position wherein (1) its center of gravity, or (2) its center of buoyancy, is utilized to determine the vertical.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
308+, for a pendulum controlled indicator of borehole inclination.
366.24, for this subject matter controlling an electrical level indicator.
- 392** This subclass is indented under subclass 391. Device wherein the body is a plumb bob suspended by a flexible line.
- SEE OR SEARCH CLASS:
16, Miscellaneous Hardware, subclass 403 for a paper weight and subclass 404 for other generic, weighting means.
- 393** This subclass is indented under subclass 392. Device including means about which the flexible line is wound for storage or for adjusting effective line length.
- 394** This subclass is indented under subclass 393. Device provided with resilient means for urging the line to a retracted position.
- 395** This subclass is indented under subclass 391. Device wherein two bodies are so related that they function simultaneously and in planes at an angle to each other.
- 396** This subclass is indented under subclass 391. Device wherein the body is supported, partially or wholly, by a liquid.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
378, for a level of plumb indicator including a float or piston related to the upper surface of a body of liquid.
- 397** This subclass is indented under subclass 391. Device wherein the pendulum is so suspended as to incline freely in any direction (e.g., universal joint, ball and socket, etc.).
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
308+, for gimbal supported borehole direction indicators with a recorder.
- 398** This subclass is indented under subclass 391. Device wherein the body includes means for adjusting it quantitatively or for adjusting its center of gravity.
- 399** This subclass is indented under subclass 391. Device including an indicium for indicating a relationship of some other part to the suspended body, the indicium being adjustably fixed to either the body or to the carrier from which the body is suspended.
- 400** This subclass is indented under subclass 399. Device wherein the adjustably fixed relationship is controlled by an operating cam, e.g., screw, gear, wedge, etc.
- 401** This subclass is indented under subclass 391. Device including means for transmitting motion from the suspended body to the indicating means, such as links, gearings, nonrigid coupling means, (e.g., magnetic, etc.).
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
365, for a magnetic output coupling for a nonelectrical level other than of a pendulum.
- 402** This subclass is indented under subclass 391. Device wherein the supporting structure for the suspended body is such as to prevent complete freedom of swing about said axis.

403 STRAIGHTEDGE TYPE:

This subclass is indented under the class definition. Subject matter comprising means having a straight edge, slot, or the like for testing, measuring, fixing, or drawing straight lines.

- (1) Note. Straightedges may differ only in their indicia or scales, which differences, however, make some of them more useful for one purpose than any other. Thus, in order to classify such straightedges with those limited by structure to the same purposes, some specific or “ultimate” functions of straightedges have been designated as the bases for classification in some of the subclasses indented under this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 1, for various other plotters and for protractors not provided with a straightedge designed to be set at various angles.
32+, for similar devices having scribe attachments.
196, for devices for truing millstone faces that sometimes include straightedge features.

SEE OR SEARCH CLASS:

- 34, Drying and Gas or Vapor Contact With Solids, subclass 89.2 for the combination of a straightedge with a blotter.
225, Severing by Tearing or Breaking, subclass 91 for a straightedge disclosed for use as a tearing edge for web or sheet.
235, Registers, appropriate subclasses for mechanical calculating devices.
434, Education and Demonstration, subclasses 111, 186, and 239+ for devices for instructing or teaching navigation.

404 Wall guide and plumb (e.g., building construction):

This subclass is indented under subclass 403. Subject matter wherein the device, as disclosed, is to be used in the construction of buildings, especially where the upright portion of the building may form an outside wall or inner partition.

405 Batter board type:

This subclass is indented under subclass 404. Subject matter comprising upright board type devices erected at the corners of a building foundation or lot over which horizontal lines are stretched to define the shape of the building, positions of walls, and the like.

406 Adjustable vertically:

This subclass is indented under subclass 404. Subject matter wherein the devices can be moved in an up or down direction along the building or wall portion.

407 Building is the vertical support:

This subclass is indented under subclass 404. Subject matter wherein the building or a wall portion is the support for the guide.

408 Connected to brick:

This subclass is indented under subclass 407. Subject matter wherein the wall is a brick wall and the wall guide is directly connected to a brick in the wall.

409 By line tension only:

This subclass is indented under subclass 408. Subject matter wherein the wall guide is a line which is stretched by a spring-type mechanism from one end of a brick wall portion to another.

410 Having adjustable clamp:

This subclass is indented under subclass 408. Subject matter comprising a device connected to a brick or wall portion which is adapted to be varied in its position along the brick or wall portion.

411 Clapboard marking:

This subclass is indented under subclass 403. Subject matter comprising devices supported or positioned for marking building materials prior to sawing.

412 Shaft aligning:

This subclass is indented under subclass 403. Subject matter comprising a device utilized as a straight line guide for positioning rodlike machine elements.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
339, for a cord type straight line guide including a level or plumb.
- 413 Cord type:**
This subclass is indented under subclass 403. Subject matter wherein the straightedge is a flexible line connected at one end to a support.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
404+, for other flexible lines guides which are used in building construction.
- SEE OR SEARCH CLASS:
242, Winding, Tensioning, or Guiding, subclasses 370+ for a reeling device for holding a cord when no specific chalking feature is defined.
- 414 With chalking feature:**
This subclass is indented under subclass 413. Subject matter having means for applying a marking medium onto the flexible line.
- 415 Multiplane angularly adjustable:**
This subclass is indented under subclass 403. Subject matter comprising a plurality of connected straightedges for varying the relative position of the straightedges in more than one plane.
- 416 Roofing framing:**
This subclass is indented under subclass 415. Subject matter comprising a multiplane straightedge type device specifically designed for measuring and laying out the length and bevels of roof rafters.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
481, for other multiplane straightedges which are fixed at various angles.
- 417 Having rafter cut indicia (e.g., pitch, rise, etc.):**
This subclass is indented under subclass 416. Subject matter wherein the straightedge device comprises various markings or numerical tables specifically designed for use in solving roof cutting problems.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
423, 476 and 494, for other types of straightedges having special types of tables or indicia.
- 418 Square and pivoted straightedge:**
This subclass is indented under subclass 403. Subject matter comprising means establishing at least one right angle and one or more straightedge members angularly adjustable on the right angle means.
- (1) Note. A square is a device having two straightedges at a 90° angle to each other, the straightedges being of substantial length. A rule is comprised of a single straightedge member of determinate length and does not function as a square of this subclass type.
- 419 And sliding:**
This subclass is indented under subclass 418. Subject matter wherein the straightedge member is arranged to have both pivotal and sliding adjustment.
- 420 Straightedge as a hypotenuse of the square:**
This subclass is indented under subclass 418. Subject matter comprising two straightedges connected to each other at an angle of 90° and one or more straightedges or other means to determine a straight line arranged to slide over the first-named straightedges, so as to be connected to each of them at selectable distances from the right angle.
- 421 Having angle or slope indicating means:**
This subclass is indented under subclass 420. Subject matter having indicia on the straightedges for indicating a degree of incline or divergence.
- 422 Having circumferential pivot, only:**
This subclass is indented under subclass 418. Subject matter wherein the straightedge can be rotated from its connected point in a circular manner.
- 423 With indicia for rafter cuts:**
This subclass is indented under subclass 418. Subject matter wherein the device includes various markings or numerical tables specifically

- designed for use in solving roof cutting problems.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
417, for similar types of straightedge devices having roof cutting tables or indicia.
- 424 With protractor:**
This subclass is indented under subclass 418. Subject matter including a device having a circular pattern of indicia for indicating angles in degrees.
- 425 And sliding straightedge:**
This subclass is indented under subclass 424. Subject matter wherein a straightedge or a portion thereof can have a circular type of sweeping motion on the protractor.
- 426 Located on straightedge:**
This subclass is indented under subclass 424. Subject matter wherein the protractor is attached to the straightedge.
- 427 Square and sliding nonpivotal straightedge(s):**
This subclass is indented under subclass 403. Subject matter wherein the straightedge can be adjusted along a straight line on the square.
- 428 Straightedge bisects right angle of square (i.e., centering square):**
This subclass is indented under subclass 427. Subject matter wherein the straightedge is situated such that as it slides on the square, an edge of the straightedge indicates two equal angles of 45°.
- 429 Square and fixed straightedge:**
This subclass is indented under subclass 403. Subject matter comprising two straightedges connected to each other at angle of 90° and at least one other straightedge is immovably attached to the other two straightedges.
- 430 Base attached:**
This subclass is indented under subclass 403. Subject matter comprising a support upon which the straightedge device is attached.
- (1) Note. If the straightedge and the base are both specially modified to engage with each other, the device is classified here, even though the straightedge may be easily removed from the base.
- 431 Navigation:**
This subclass is indented under subclass 403. Subject matter comprising a device specially designed for plotting or computing a given course through the air or on land and water.
- SEE OR SEARCH CLASS:
235, Registers, subclass 61 comprising calculating machines for mechanically performing the various mathematical functions.
- 432 Perspective drawing:**
This subclass is indented under subclass 430. Subject matter comprising a device specially designed to help depict from a plan or elevation a view as it would appear to the eye.
- 433 With T-square straightedge:**
This subclass is indented under subclass 432. Subject matter comprising a headpiece or stock having at least one straightedge and another straightedge connected to the headpiece at substantially its median point at a 90° angle and designed to project beyond the head on its straightedge side.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
468, and 479, for similar T-square type devices but not base attached.
- 434 With parallel straightedge arrangement (i.e., drafting machine):**
This subclass is indented under subclass 432. Subject matter comprising a straightedge device which may be moved over the supporting base or surface with the ruling edge of the straightedge at all times in line with a vanishing point as relates to drawing perspectives.
- 435 Rotary base:**
This subclass is indented under subclass 430. Subject matter wherein the support base can be moved in a circular motion while the straightedge device maintains a constant position.

436 Linear counter rule:

This subclass is indented under subclass 430. Subject matter comprising a straightedge on the supporting base with special indicia markings for determining various lengths or widths of work placed on the support.

437 With guide or catch for T-square type:

This subclass is indented under subclass 430. Subject matter comprising means for maintaining the straightedge in positive rectilinear path relative to the base as it is moved along the edge of the supporting base.

438 Universal parallelism arrangement:

This subclass is indented under subclass 430. Subject matter wherein the straightedge device is so attached to the base for movement that it may be set for movement in any one direction relative to the base and moved over all portions of the surface of the base in that direction.

439 Wheel and band:

This subclass is indented under subclass 438. Subject matter comprising a rotatable cylindrical guide and a flexible belt or cord traveling over the cylindrical guide and attached to the straightedge to assist in guiding the movement of the straightedge device.

440 With counterbalance:

This subclass is indented under subclass 439. Subject matter including a weight device connected to the band to oppose or offset the weight of or forces acting on the straightedge device.

441 Double linkage:

This subclass is indented under subclass 438. Subject matter comprising a pantographic-type connection to the straightedge device and adapted to move freely over the support work surface at all time in a predetermined angular relationship to the support surface.

442 With counterbalance:

This subclass is indented under subclass 441. Subject matter including a weight device connected to the pantographic device to oppose or offset the weight of or force acting on the straightedge device.

443 Both ends connected:

This subclass is indented under subclass 430. Subject matter wherein the straightedge is attached to the supporting base at each extremity by some means to guide the straightedge on the support base.

444 By cord and roller:

This subclass is indented under subclass 443. Subject matter comprising a rotatable cylindrical guide and flexible means traveling over the guide so as to assist in the mechanical movement of the straightedge device.

445 By rack and pinion:

This subclass is indented under subclass 443. Subject matter comprising a bar with teeth on one face for gearing with a pinion or worm gear to assist in a positive manner the mechanical movement of the straightedge device.

SEE OR SEARCH THIS CLASS, SUBCLASS:

447, and 450, for other straightedge devices which have means for positive movement.

446 One end moveable along straightedge:

This subclass is indented under subclass 443. Subject matter comprising means on one extremity of the straightedge for accurately guiding the straightedge on one edge of the support base.

447 Set shift, positively:

This subclass is indented under subclass 430. Subject matter comprising means for moving the straightedge device a predetermined increment along the surface of the support base.

SEE OR SEARCH THIS CLASS, SUBCLASS:

445, and 450, for devices for accurately advancing the straightedge over the work.

448 With means for moving straightedge over a surface:

This subclass is indented under subclass 403. Subject matter comprising means incorporated into the straightedge device for facilitating the movement over the work supported on the base.

449 By rollers:

This subclass is indented under subclass 448. Subject matter wherein the means for moving the straightedge includes rotatable cylindrical supports.

450 Set shift:

This subclass is indented under subclass 448. Subject matter comprising means for moving the straightedge device in predetermined increments along the surface of the work.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

445, and 447, for devices for accurately advancing the straightedge over the work.

451 Combined with level:

This subclass is indented under subclass 403. Subject matter having means to assist in the alignment of the straightedge with respect to the direction of the force of gravity comprising gravity indicating means.

- (1) Note. Level of plumb structure per se can be found in other sections of this class under subclasses 300+, "Indicator of Direction of Force Traversing Natural Media". The primary difference is that the intended function of the device is that of indicating direction rather than it being utilized as a straightedge device.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

365+, for levels including those similar to those found in this subclass, although a straightedge-type device may be disclosed.

452 Plural straightedges, relatively moveable:

This subclass is indented under subclass 403. Subject matter comprising two or more straightedges which can be adjusted in relation to each other for the purpose of positioning either straightedge on the work as needed.

453 Triangulation (e.g., solving trigonometric functions):

This subclass is indented under subclass 452. Subject matter including means for the measurement of triangles on the earth's surface

(e.g., surveying) or broadly for performing any similar trigonometric operation for finding a position or location by means of bearings from two fixed points a known distance apart.

454 Parallel type:

This subclass is indented under subclass 452. Subject matter comprising at least two straightedges linked together so as to permit one of the straightedges to assume positions of varying distances from the other while maintaining parallelism with the stationary straightedge.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

427, for devices having a bar slidingly mounted on another bar and which may be used for drawing parallel lines.

430+, for base attached parallel type straightedge.

455 Intercontrolled bevel blades:

This subclass is indented under subclass 452. Subject matter comprising a plurality of straightedges connected and pivoted to each other so that one of the straightedges cannot be adjusted to a new position without a proportional movement of the other straightedge(s).

- (1) Note. The subject matter of this subclass generally relates to an angle determinator and bisector for use by skilled carpenters, mechanics, and other craftsmen in the measuring of angles and for determining the bisector of any angle measured.

456 Multipivoted straightedges:

This subclass is indented under subclass 452. Subject matter comprising a plurality of straightedges each having more than one pivot point to permit the pivoted adjustment of one straight edge relative to another.

457 Navigational:

This subclass is indented under subclass 456. Subject matter comprising a device specially designed for plotting or computing a given course through the air or on land or water.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
431, for similar type of navigation devices having a base.
- SEE OR SEARCH CLASS:
235, Registers, subclass 61 for calculating machines for mechanically performing the various mathematical functions.
- 458 Folding rule type:**
This subclass is indented under subclass 456. Subject matter comprising a plurality of straightedges pivotally connected at their extremities and particularly designed to be used as measuring devices when all the sections are laid out in a straight line.
- (1) Note. When the device has more than one pivot which are adjusted to positions other than a straight line or other measuring purposes, the patents are placed elsewhere in the schedule.
- (2) Note. The patents in this subclass relate to devices which are folded for the purpose of storage.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
456, for multipivoted straightedges which are designed for the purpose of making a geometrical relationship.
- 459 Two straightedges pivoted at the ends of a central straightedge:**
This subclass is indented under subclass 456. Subject matter comprising one straightedge having another straightedge adjustable at each of the extremities of the one straightedge.
- (1) Note. The middle straightedge is generally the longest of the other two straightedges, while the outer straightedges are generally work contact edges.
- 460 At least one pivot is sliding:**
This subclass is indented under subclass 459. Subject matter wherein one or both of the outer straightedges can traverse the pivot.
- 461 Central straightedge longitudinally adjustable:**
This subclass is indented under subclass 460. Subject matter wherein the middle straightedge is constructed in sections that can be varied in length by telescoping one section relative to the other.
- 462 Central straightedge longitudinally adjustable:**
This subclass is indented under subclass 459. Subject matter wherein the middle straightedge is constructed in sections that can be varied in length by telescoping one section relative to the other.
- 463 Three straightedges forming a triangle:**
This subclass is indented under subclass 459. Subject matter wherein the various straightedges are adjustable to construct a three-sided geometrical figure.
- 464 Sliding:**
Subject matter under 452 wherein the straightedges can be adjusted by traversing one relative to the others.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
423, and 470, for other sliding straightedges.
- 465 Single pivot:**
This subclass is indented under subclass 452. Subject matter wherein the various straightedges are connected together so as to be rotatable relative to one another about a single axis.
- 466 Handsaw attachment:**
This subclass is indented under subclass 465. Subject matter comprising a disclosed manually usable carpenter's saw having a straightedge-type device for guiding the tool or indicating some type of measurement.
- SEE OR SEARCH CLASS:
7, Compound Tools, subclass 150 for details of a handsaw combined with a straightedge, level, etc.

- 467 Lettering guide:**
This subclass is indented under subclass 465. Subject matter comprising a device utilized for steadying or directing the motion of a tool for writing or printing alpha or numeric characters.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
477, for similar type lettering devices having a single pivotal movement.
- 468 T-Head with pivoted straightedge:**
This subclass is indented under subclass 465. Subject matter comprising a headpiece or stock having at least one straightedge and another straightedge connected to the headpiece about an axis at substantially its median point at a 90° angle and designed to project beyond the headpiece on its straightedge side.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
433, and 474, for similar type T-head construction.
- 469 Locking:**
This subclass is indented under subclass 468. Subject matter having means for holding the position of the pivoted straightedge with respect to the head or stock at one or more definite points.
- 470 Sliding:**
This subclass is indented under subclass 468. Subject matter wherein the straightedge is arranged for transverse adjustment through the pivot point.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
464, and 473, for other sliding straightedges.
- 471 With angle indicating means:**
This subclass is indented under subclass 465. Subject matter having indicia on the straightedge for indicating a degree of incline or divergence.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
Appropriate subclass for angle indicating means bearing particular types of indicia.
- 472 Pivot straightedge and sliding nonpivoted:**
This subclass is indented under subclass 465. Subject matter comprising a straightedge having a pivotal adjustment which may slide relative to a base straightedge and another straightedge having a sliding but nonpivotal motion on the base straightedge.
- 473 Sliding pivotal adjustment:**
This subclass is indented under subclass 465. Subject matter wherein one of the straightedges can traverse its connection at the axis in addition to its rotary movement.
- (1) Note. Included in this subclass are devices best known in the art as bevels.
- 474 Plural straightedges nonadjustably fixed at right angles (e.g., T-square, triangles, squares):**
This subclass is indented under subclass 403. Subject matter comprising various straightedges which are conjointly secured at an angle of 90°.
- 475 With right angle truing adjustment:**
This subclass is indented under subclass 474. Subject matter provided with means to accurately position the straightedges at a 90° angle relative to each other.
- 476 With special scale markings:**
This subclass is indented under subclass 474. Subject matter provided with indicia pertaining to a specific type of a measurement desired.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
494, for other similar type for scale indicia on single straightedge devices.
- 477 Lettering guide:**
This subclass is indented under subclass 474. Subject matter comprising a device utilized for establishing boundaries for writing or printing alpha or numeric characters.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
467, for similar type lettering guides.
- 478 Folding or separable:**
This subclass is indented under subclass 474. Subject matter wherein the straightedges are adjustable from a storage position to a 90° angle or one of the straightedges can be removed from the device.
- (1) Note. The devices are generally intended to be used only at fixed right angles and folded merely for storage purposes.
- 479 T-square:**
This subclass is indented under subclass 474. Subject matter comprising a headpiece and a straightedge secured to the headpiece at substantially its median point at an angle of 90°, the straightedge being designed to project beyond the headpiece.
- 480 Try square:**
This subclass is indented under subclass 474. Subject matter comprising two straightedges conjointly secured at a 90° angle for the purpose of ascertaining whether a piece of work is at a true 90° angle.
- 481 Multiplane:**
This subclass is indented under subclass 474. Subject matter wherein the straightedge device is constructed to ascertain a desired measurement in more than one plane.
- 482 Plural nonadjustable straightedges forming nonright angles:**
This subclass is indented under subclass 403. Subject matter comprising a closed straight-edge geometrical figure having other than angles at 90°.
- (1) Note. The patents included in this subclass are known in the art as polygons.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
418+, 427+, and 429, for devices which include closed geometrical figures having right angles.
- 483 Rules:**
This subclass is indented under subclass 403. Subject matter comprising a single nonattached straight bar of rigid enough material to guide a tool for drawing straight lines and having some type of indicia on the straightedge for making some type of measurement.
- SEE OR SEARCH CLASS:
34, Drying and Gas or Vapor Contact With Solids, subclass 89.2 for a ruler combined with a blotter.
- 484 With attachment:**
This subclass is indented under subclass 483. Subject matter comprising some additional device to facilitate the use of the straightedge for drawing straight line.
- 485 For performing diverse function:**
This subclass is indented under subclass 484. Subject matter wherein the attachment comprises additional means to permit the use of the straightedge for some other purpose than drawing straight lines.
- 486 Index:**
This subclass is indented under subclass 484. Subject matter including an indicator or marker which may be adjusted on the straightedge to point out sequentially desired indicia.
- 487 For subdividing:**
This subclass is indented under subclass 486. Subject matter comprising means on the straightedge for indicating equal increments.
- 488 Optical (e.g., magnifying):**
This subclass is indented under subclass 486. Subject matter provided with means on the straightedge to enlarge or emphasize the indicia on the straightedge.
- 489 For supporting above work surface:**
This subclass is indented under subclass 484. Subject matter provided with means on the straightedge to space it relative to the surface upon which the straightedge is positioned.
- 490 Located on end:**
This subclass is indented under subclass 484. Subject matter wherein a device is positioned at the extremities of the straightedge for the

- purpose of facilitating the drawing of a straight line.
- 491 Selectable:**
This subclass is indented under subclass 484. Subject matter wherein the straightedge is constructed to provide a choice of ruling edges.
- 492 Edge details:**
This subclass is indented under subclass 483. Subject matter wherein the straightedge is constructed to provide a ruling edge having one or more designs on said edge for drawing other than straight lines.
- 493 Particular material:**
This subclass is indented under subclass 483. Subject matter wherein the straightedge is constructed of some specified type of material.
- (1) Note. Included in these minerals are plastics, wood, and metals.
- 494 Special scale markings:**
This subclass is indented under subclass 483. Subject matter provided with indicia pertaining to a specific type of a measurement desired.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
476, for other or similar type of scale indicia on single straightedge devices.
- 495 Pivot joints:**
This subclass is indented under subclass 403. Subject matter comprising structure wherein straightedges are connected about a common axis to provide limited rotary movement only.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
468, for T-head and pivoted straightedge.
- 496 180 degree limit:**
This subclass is indented under subclass 495. Subject matter wherein the rotary movement is limited to extend the straightedges into a straight line position (i.e., 180°).
- 497 Locking:**
This subclass is indented under subclass 496. Subject matter having means for positively securing the movement or position of the straightedges at one or more definite points.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
469, for pivoted straightedge having means for securing the straightedge to a definite position.
- 498 90 degree limit:**
This subclass is indented under subclass 495. Subject matter wherein the rotary movement of the straightedges is to a right angle maximum.
- 499 Locking:**
This subclass is indented under subclass 498. Subject matter having means for positively securing the movement or position of the straightedges at one or more definite points.
- 500 Locking:**
This subclass is indented under subclass 495. Subject matter having means for positively securing the movement or position of the straightedges at one or more definite points.
- 501 GAUGE:**
This subclass is indented under the class definition. Subject matter which includes a contact member ("Probe") to touch an animate or inanimate object (a) to determine a geometrical characteristic of the object, or (b) to support and position a workpiece for gauging.
- (1) Note. Probes which physically contact an object with or without a transducer are in this group of subclasses.
- (2) Note. Gauging subcombinations are classifiable in this group of subclasses.
- (3) Note. Tolerance gauges are in this group of subclasses.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
2+, for an apparel gauge.
18+, for a scriber.
121+, for an area integrator.
227+, for a straight line light ray gauge.
300+, for an indicator of direction of force traversing natural media.
463+, for a straight edge type gauge.
700+, for a distance gauge.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclasses 104+ for surface and cutting edge testing including roughness, subclass 147 for a dynamic wing area or propeller study in a wind tunnel and subclass 149 for volume content measuring.
- 209, Classifying, Separating, and Assorting Solids, subclasses 531+ for sorting bottles, ampoules, jars, drinking vessels or ceramic and glass containers by means of a contact gauge and subclasses 601+ for sorting items by a contact gauge.
- 324, Electricity: Measuring and Testing, subclasses 200+ for testing a magnet. An electromagnetic field, material, stress in material, displacement, eddy current and flaw testing by means of a magnetic field, subclasses 600+ for determining a nonelectric property by means of an impedance, admittance or a related quantity, and subclass 457 for electrostatic field testing.
- 340, Communications: Electrical, subclass 678 for a geometrical gauge responsive indicating system.
- 356, Optics: Measuring and Testing, subclasses 345+ for a light interference type gauge, subclasses 138+ for an angle measurement or axial alignment gauge, and subclasses 372+ for a mensuration or contour comparison gauge.
- 422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, subclasses 50+ for an analyzer, structured indicator, or manipulative laboratory device.
- 451, Abrading, subclass 46 for a process of grinding a gauge.
- 483, Tool Changing, subclasses 19 and 31 for apparatus for supporting a particular tool, such as a probe, combined with tool transfer means.

501.01 Leather grading or size:

This subclass is indented under subclass 501. Subject matter wherein the contact member determines the size of weight of a piece of leather.

501.02 Continuous gauging:

This subclass is indented under subclass 501. Subject matter wherein the contact member engages a moving material or article to determine the grade or size of the material or article.

- (1) Note. An indicator that measures plus or minus zero setting or markings, that do not give an actual measure are here.

SEE OR SEARCH THIS CLASS, SUBCLASS:

501.01, for continuous grading of leather.

501.03 Including electric means:

This subclass is indented under subclass 501.02. Subject matter having an electric circuit and/or electric indicator.

501.04 Pivoted probe:

This subclass is indented under subclass 501.03. Subject matter wherein the contact member is movable about a point.

501.05 Comparator:

This subclass is indented under subclass 501. Subject matter having means for comparing an article or material with a given size or measurement.

- (1) Note. These gauges have set probes, a zero dial with plus or minus mark, etc., but do not give a variable measurement as classified in subclasses 700.

SEE OR SEARCH THIS CLASS, SUBCLASS:

700, for distance measurement.

501.06 Beam type:

This subclass is indented under subclass 501.05. Subject matter having mounted on a bar or rod, at least two contact members of which at least one is movable.

SEE OR SEARCH THIS CLASS, SUBCLASS:

545, for comparison with a standard.

795, for a beam type measuring means.

501.07 Three contact probes:

This subclass is indented under subclass 501.06. Subject matter wherein the beam has three contact members mounted on it.

501.08 Hand held:

This subclass is indented under subclass 501.05. Subject matter wherein the gauge is supported by a human hand.

501.09 Plural contact probes:

This subclass is indented under subclass 501.08. Subject matter having more than one contact member.

501.1 Only three probes:

This subclass is indented under subclass 501.09. Subject matter wherein the comparator has only three contact members.

501.11 Implement type:

This subclass is indented under subclass 501.7. Subject matter wherein the gauge is held by a person's hand when in use.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
501.13, for gauging pairs of gears.

501.12 Internal:

This subclass is indented under subclass 501.7. Subject matter wherein the teeth are on the inside surface of a passageway, cavity or hole.

501.13 By pair of engaged gears:

This subclass is indented under subclass 501.7. Subject matter wherein the contact member is a gear which is rotated while in contact with another gear.

- (1) Note. All gears in this subclass are production gears whereas in subclass 501.19 one of the gears is a master which is used for test only.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
501.19, for test by using a rotating master gear.

501.14 By probe:

This subclass is indented under subclass 501.7. Subject matter wherein the contact member has a slender elongated shape which contacts a tooth during a test.

501.15 Teeth spacing:

This subclass is indented under subclass 501.14. Subject matter wherein the probe is used to determine the distance between adjacent teeth.

501.16 Including a master:

This subclass is indented under subclass 501.14. Subject matter wherein the probe compares a gear to a standard reference gear.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
501.19, for gear testing by a master, per se.

501.17 Plural probes:

This subclass is indented under subclass 501.14. Subject matter having more than one contact member.

501.18 Only two:

This subclass is indented under subclass 501.17. Subject matter wherein exactly two probes are used for measuring.

501.19 By rotary master:

This subclass is indented under subclass 501.7. Subject matter wherein the contact member is a standard reference gear that turns about an axis through its center.

501.2 With rotary indicator:

This subclass is indented under subclass 501.1. Subject matter having a movable readout member which turns about an axis so as to indicate measurement.

501.3 Only four probes:

This subclass is indented under subclass 501.09. Subject matter wherein the comparator has only four contact members.

501.4 With rotary indicator:

This subclass is indented under subclass 501.09. Subject matter having a movable readout member which turns about an axis so as to indicate measurement.

501.45 Fixed size:

This subclass is indented under subclass 501.09. Subject matter having two different single size contact members and only one member at a time contacts an article to determine if the size is over, under or just right.

501.5 With pivot means:

This subclass is indented under subclass 501.08. Subject matter having a member which includes a contact member that moves about a point.

501.6 Electric type:

This subclass is indented under subclass 501.05. Subject matter having an indicator controlled by an electric circuit or an electric indicator.

501.7 Tooth testing (e.g., gear, rack):

This subclass is indented under subclass 501. Subject matter wherein the contact member engages a gear type element for determining the form, shape, etc., of a tooth or teeth.

SEE OR SEARCH CLASS:

73, Measuring and Testing, subclass 162 for processes and apparatus for determining other physical characteristics of gears such as tooth strength, noise produced by meshing, etc.

501.8 By electrical comparison:

This subclass is indented under subclass 501.7. Subject matter wherein the gear type element is examined by using an electrical reference pattern to observe similarities or differences.

SEE OR SEARCH CLASS:

340, Communications: Electrical, subclasses 5.1 through 5.92 for intelligence comparison for controlling in a selective communication system.
702, Data Processing: Measuring, Calibrating, or Testing, appropriate subclasses for measuring or testing using specific data processing.

501.9 Including a probe:

This subclass is indented under subclass 501.8. Subject matter having a contact member which has a slender elongated shape.

502 With calibration device or gauge for nuclear reactor element:

This subclass is indented under subclass 501. Subject matter (a) which includes structure to check and adjust the response of the gauge or (b) wherein the contact member gauges a nuclear fuel element, control element or element container.

SEE OR SEARCH THIS CLASS, SUBCLASS:

545+, for comparison of a tested article with a standard.
567, for a gauge block, per se.

SEE OR SEARCH CLASS:

73, Measuring and Testing, subclasses 1.75+ for proving or calibration of an angle, direction, or inclination measuring apparatus; and subclasses 1.79+ for proving or calibration of a displacement, motion, distance, or position measuring apparatus.
250, Radiant Energy, subclass 252.1 for calibration or standardization methods and subclasses 336.1+ for testing particle or wave nuclear radiation.
376, Induced Nuclear Reactions: Processes, Systems, and Elements, subclass 450 for fuel component structure with condition sensing or indicating means.

503 Coordinate movable probe or machine:

This subclass is indented under subclass 501. Subject matter wherein the contact member is (a) part of a device to determine a position or change in position in at least two perpendicular direction with respect to a common origin or (b) movable in at least two perpendicular direction with respect to a common origin.

SEE OR SEARCH THIS CLASS, SUBCLASS:

1, for a two-coordinate motion device.
18+, for a scribe controlled by coordinate motion probe support.
505, for a gauge having a computer control or an analogue-to-digital device.
520, for a center locator or center line location.
551+, for a profile test with a support for tested article.

- 556, for a profile gauge having a movable contact probe.
- 558, for a movable contact probe which has movement in a least two perpendicular direction where no linear movement in the perpendicular directions is involve.
- 568, for a work support adjustment in at least two perpendicular directions.

504 With computer responsive to contact probe:

This subclass is indented under subclass 501. Subject matter wherein the contact member is movable and includes a calculator, responsive to the movable member, to perform some mathematical function.

SEE OR SEARCH CLASS:

- 700, Data Processing: Generic Control Systems or Specific Applications, subclass 303 for dimensional responsive control system.

505 Having program control or an analogue to digital device:

This subclass is indented under subclass 501. Subject matter which includes a device (a) to control the logical order of events in a gauging operation or (b) convert analogue information into digital information or digital information into analogue information.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 504, for a gauge with a computer.

SEE OR SEARCH CLASS:

- 341, Coded Data Generation or Conversion, subclasses 126+ for analog to or from digital conversion, per se.
- 700, Data Processing: Generic Control Systems or Specific Applications, subclass 303 for dimensional control.
- 702, Data Processing: Measuring, Calibrating, or Testing, subclass 97 for calibration of length, distance, or thickness, and subclasses 155+ for dimensional determination.

506 Target, weapon or weapon projectile:

This subclass is indented under subclass 501. Subject matter wherein the contact member contacts (a) a target to locate a projectile hit, (b) weapon part to determine the size or shape

of the weapon part or some other geometrical characteristic of the part, or (c) a projectile of a weapon to determine some geometrical characteristic of the projectile.

- (1) Note. Archery bow and gun gauges are here.
- (2) Note. Arrow and cartridges gauges are here.

SEE OR SEARCH CLASS:

- 42, Firearms, subclasses 55+, for breech loading weapons, subclasses 59+ for revolvers, subclasses 71+ for stocks and subclasses 76+ for gun barrels.
- 102, Ammunition and Explosives, subclasses 430+ for cartridges particularly subclasses 464+ for a cartridge case.
- 124, Mechanical Guns and Projectors, subclasses 16+ for spring type guns and projectors, subclasses 23.1+ for an archery bow and subclass 56 for fluid pressure guns and projectors.
- 273, Amusement Devices: Games, subclass 408 for a target penetrated by a projectile.
- 473, Games Using Tangible Projectile, subclasses 578+ for an arrow.

507 Lens:

This subclass is indented under subclass 501. Subject matter wherein the contact member contacts a lens.

- (1) Note. A lens includes a lens blank.
- (2) Note. Gauging (a) curvature, or length and width, or locating (b) a point, (c) the mechanical axis or (d) the optical axis of a lens, is classifiable here.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 28, for lens scribes.
- 520, for center, point between centers or center line location.

SEE OR SEARCH CLASS:

- 356, Optics: Measuring and Testing, subclass 127 for optical center cylinder axis or prism measuring or determining.

451, Abrading, subclasses 42+ for a method of grinding a lens and subclasses 246+ for an abrading machine having a rotary, cylindrical abrading tool adapted to engage a rotating workpiece, such as a lens.

508 Golf stance, swing or club analysis:

This subclass is indented under subclass 501. Subject matter wherein the contact member touches the feet, ball, hands or club to check a golfers posture, swing, club face angle with respect to the hole or a geometrical condition of the golf club.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

1, for angular measurement.
533, for straightness or alignment.
534, for an angle measurement.

SEE OR SEARCH CLASS:

434, Education and Demonstration, subclass 252 for golf instruction.
473, Amusement Devices: Games, subclasses 198+, 201+, 207+, 218, 219+ and 266+ for indicators associated with golfing equipment or with golf practice devices used in playing or practicing the game.

509 Bowling ball:

This subclass is indented under subclass 501. Subject matter wherein the contact member determines the position of the holes to be made in an undrilled bowling ball so that the undrilled bowling ball can be marked and drilled to custom fit the ball to individuals.

- (1) Note. Here are contact type gauges to show the angle that the bowling fingers makes with the surface of a bowling ball.
- (2) Note. "Pitch" is the angle the finger hole center line makes with the surface of a ball.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

391+, for a pendulum type indicator of direction of force caused by the attraction of the mass of an article to the mass of the earth.
534+, for an angle gauge generally.

542+, for an internal gauge.

SEE OR SEARCH CLASS:

408, Cutting by the Use of Rotating Axially Moving Tool, subclasses 1+ for a method of drilling a bowling ball.
434, Education and Demonstration, subclass 249 for teaching bowling.
473, Amusement Devices: Games, subclasses 54+ for a bowling game, particularly subclasses 55+ for a bowling practice or assist device, subclasses 67+ for an indicator for a bowling pin handling device, and subclasses 125+ for a bowling ball with means to change finger hole location or size.

510 Grip:

This subclass is indented under subclass 509. Subject matter which includes a simulated bowling ball and the contact member has variable thumb and finger holes spaced from each other on the ball and means to determine the spacing between the thumb and the fingers used to grip a bowling ball.

- (1) Note. "Grip" is the distance between the bowlers thumb and bowling fingers when gripping a bowling ball.

511 Anatomical:

This subclass is indented under subclass 501. Subject matter which includes a contact member which touches an animal, a human being or a dental prosthesis part to be used by a human being.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

195, for a hoof gauge.

SEE OR SEARCH CLASS:

54, Harness, subclasses 19.1+ for collars.
119, Animal Husbandry, subclasses 856+ for a collar or other body- or appendage-encircling device.

512 Human:

This subclass is indented under subclass 511. Subject matter wherein the contact member contacts a human body or prosthesis.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 2+, for an apparel or apparel layout gauge.
- 23, for a scribe pantograph of human form.
- 508, for a golf stance, swing or club analysis gauge.
- 509+, for a bowling ball gauge.

SEE OR SEARCH CLASS:

- 600, Surgery, subclasses 587+ for measuring an anatomical characteristic.

513 **Dental:**

This subclass is indented under subclass 512. Subject matter wherein the contact member is restricted to dental use.

- (1) Note. The gauge may be used on the head, supported by the head, contacts the head as at the chin or the forehead or the gauge may be used with the gauging of artificial teeth or a tooth.

SEE OR SEARCH CLASS:

- 433, Dentistry, subclasses 72+ for dental apparatus having a gauge or guide.

514 **With mouth or teeth contact:**

This subclass is indented under subclass 513. Subject matter wherein the contact member contacts the mouth or the teeth of a person.

514.1 **Ring type:**

This subclass is indented under subclass 512. Subject matter wherein the contact member contacts a finger of a person for determining ring size.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 544.3, for a gauge to measure the size of a ring.
- 555.1+, for a gauge for determining circular size.

514.2 **Conformator:**

This subclass is indented under subclass 512. Subject matter, wherein the contact member is constructed such that when pressed against a human body it will conform to the same and when removed it will retain a shape corre-

sponding to the shape of the body or the contact member can be formed to a shape of a human body.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 561.1+, for conformator used on objects.

SEE OR SEARCH CLASS:

- 223, Apparel Apparatus, subclasses 12+ and 24+ for combined conformator and stretcher.

515 **Having support or foot locator for body:**

This subclass is indented under subclass 512. Subject of matter with a support for the human body or a foot locator which is part of the contact member apparatus.

516 **Point reproducer:**

This subclass is indented under subclass 501. Subject matter wherein the contact member contacts a point on a three dimensional object to (a) duplicate the point on a three dimensional copy of the object or (b) check or transfer a point on the three dimensional object to or from another object.

517 **Bearing or bearing part:**

This subclass is indented under subclass 501. Subject matter which includes a device to gauge a bearing or bearing part.

SEE OR SEARCH CLASS:

- 29, Metal Working, subclasses 898+ for a process for making bearing or component thereof, and subclass 724 for means to assemble or disassemble a roller or ball bearing.
- 73, Measuring and Testing, subclass 9 for a frictional resistance test.
- 340, Communications: Electrical, subclass 682 for testing a bearing condition responsive indicating system.
- 451, Abrading, subclasses 49+ for grinding of a roll, roller, shaft, ball, or piston.

518 **Masonry construction:**

This subclass is indented under subclass 501. Subject matter wherein the contact member gauges structure constructed of brick, stone or block.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
562+, for a template.

519 Cam profile or keyway:

This subclass is indented under subclass 501. Subject matter wherein the contact member contacts (a) the working face of a cam or (b) a groove, in a part, designed to be used with a key.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
546+, for a profile test involving a comparison with a standard.
551+, for a profile test including a support for the article tested.
556+, for a profile test using a movable contact probe.

SEE OR SEARCH CLASS:
74, Machine Element or Mechanism, subclasses 567+ for a cam.

520 Center, point, distance between centers or center line location:

This subclass is indented under subclass 501. Subject matter for a single object wherein the contact member locates or checks (a) the center of a hole, (b) a point on a surface, (c) the center of an arc, (d) the distance between hole centers or (e) the location of a center line.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
644+, for the relative location of the center of two or more objects.

SEE OR SEARCH CLASS:
408, Cutting by Use of Rotating Axially Moving Tool, subclass 75 for a centering means adapted to be replaced by a cutting tool, subclasses 115+ for an adjustable tool guiding bushing with a cutting tool and subclass 241 for a drill bushing.

521 Earth profile or road grade or shrub or tree trim guide:

This subclass is indented under subclass 501. Subject matter wherein there is (a) a contact member or members forming a plurality of points contacting the earth or a road bed to

establish or check the elevation at each of the points or (b) wherein the contact member serves as a profile or trim guide for a shrub or a tree.

SEE OR SEARCH CLASS:

37, Excavating, subclass 381 for a road grader.
404, Road Structure, Process, or Apparatus, subclass 27 for a pavement with a road bed.

522 Container:

This subclass is indented under subclass 501. Subject matter wherein the contact member inspects some geometrical characteristic of a receptacle.

SEE OR SEARCH CLASS:

73, Measuring and Testing, subclasses 37+ for testing sealed or unsealed objects including a receptacle with fluid pressure, particularly subclasses 40+ for a leakage test with or without discard of defective objects and subclass 52 for testing a sealed receptacle.
177, Weighing Scales, subclass 1 for processing of weighing and subclasses 52+ for a conveyor means handling successive receivers relative to filling and weighing means.
209, Classifying, Separating, and Assorting Solids, subclasses 522+ for sorting a ceramic or glass container.
250, Radiant Energy, subclass 223 for testing a bottle by a photoelectrical optical or preoptical system.
340, Communications: Electrical, subclass 613 for a condition responsive to weight in a container.
356, Optics: Measuring and Testing, subclass 427 for testing container content by rotation or agitation and subclass 428 for testing a container by rotation or agitation.

523 With conveying wheel support:

This subclass is indented under subclass 501. Subject matter which includes a wheeled support for the contact member for moving the member along the surface tested.

- (1) Note. Classified here are gauges to examine a road or railroad track.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 556+, for movably supported contact probe gauge.
572, for a gauge contact member support.
651+, for railway track gauge.

523.1 For railway track:

This subclass is indented under subclass 523. Subject matter wherein the contact member contacts rails for aligning or checking purpose.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 651.1, for a track gauge of general use.

523.2 With recording means:

This subclass is indented under subclass 523.1. Subject matter including means to make a record of track condition.

524 Food portion:

This subclass is indented under subclass 501. Subject matter wherein the contact member determines geometrically (a) the amount of food to make a portion of a meal, (b) a portion of a constituent material making a food item, or which consists of or includes a pattern to form portions of a food item, or a marker to form a design on the food item.

- (1) Note. The food may be cooked or uncooked.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 125+, for a distance measurement.
534+, for an angle gauges.
555.1+, for a circular gauge.
562+, for a template.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclass 426 for a measuring vessel.

525 Pie, cake, cheese, pizza or sandwich portion:

This subclass is indented under subclass 524. Subject matter wherein the member determines a portion of pie, cake, cheese, pizza or sandwich.

SEE OR SEARCH CLASS:

- 30, Cutlery, subclass 289 for a knife with a cutting guide.
83, Cutting, subclasses 821+ for a cutter with means to guide the cutter.
99, Foods and Beverages: Apparatus, subclass 450.3 for a pie making machine and subclass 450.4 for a sandwich making machine.

526 Flooring, floor or wall covering, or molding:

This subclass is indented under subclass 501. Subject matter wherein the contact gauge member contacts flooring room molding or floor or wall covering material for the purpose of marking or cutting the material.

- (1) Note. The marking or the cutting member is not claimed with this gauge.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 18+, for a scribe.
103+, for a straight edge.

SEE OR SEARCH CLASS:

- 30, Cutlery, subclass 289 for material guide to cause a cutting tool to move in a predetermined manner to the material.
83, Cutting, subclasses 13+ for cutting methods and subclass 651 for a cutting tool or a cutting tool with a support.

527 Floor covering:

This subclass is indented under subclass 526. Subject matter wherein the material gauged is a floor tile, linoleum carpet or rug.

528 Wall panel outline marker for utility:

This subclass is indented under subclass 501. Subject matter wherein the contact member is used to note the location and the outline of a utility cutout to be made in a wall of a building.

- (1) Note. The utility includes electrical power, lighting, heating, cooling and water.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 562+, for a template.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), subclasses 220.1+ for a service duct within a barrier.

529 Pipe layout or fitting:

This subclass is indented under subclass 501. Subject matter wherein the contact member is (a) a pattern to lay out the shape of sheet metal to form a pipe, (b) a fitting gauge to determine the length, size or angle of a pipe section to be formed or (c) a gauge to determine how to cut an existing pipe.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 1, for a layout instrument and an angular measurement.
18+, for a scribe.
534+, for an angle gauge.
562+, for a template.
700+, for a distance instrument.

SEE OR SEARCH CLASS:

- 72, Metal Deforming, subclasses 199+ for metal deforming by use of a roller or roller-like tool element, subclass 253.1 for metal deforming by extruding through an orifice and subclasses 362+ or a process of metal deforming.
138, Pipes and Tubular Conduits, subclass 155 for joined sections and subclass 156 for a longitudinally seamed pipe.

530 Pitchometer:

This subclass is indented under subclass 501. Subject matter wherein the contact member contacts a propeller blade to determine or check a relationship between a surface of the blade with a fluid to be contacted by the blade surface.

- (1) Note. Marine and aircraft propellers are tested here.
(2) Note. The contact member may test a contour, angle or a distance related to the pitch of the blade.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 534, for an angle measurement.

- 551+, for a profile test gauge having a support for the tested article.

- 556+, for movable contact probe testing an article for profile or some other characteristic.

- 572, for a gauge contact probe support.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclass 149 for a aerodynamic propeller study and subclasses 455+ for a propeller rotor unbalance test.

531 Taper:

This subclass is indented under subclass 501. Subject matter wherein the contact member gauges an object surface which is symmetrical about an axis and decreases gradually in size in a dimension perpendicular to the axis.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 199+, for a screw thread gauge.
452+, for plural straight edges, relatively movable to measure taper.
542+, for an internal gauge.
734+, for an angle gauge.

532 External:

This subclass is indented under subclass 531. Subject matter wherein the taper is outside of the object.

533 Straightness, flatness or alignment:

This subclass is indented under subclass 501. Subject matter wherein the contact member (a) gauges an object that has an axis to determine whether the axis is a straight line, (b) gauges an object to determine if the surface has every point in the same flat plane, or (c) gauges an object at certain points to determine that the points are at the proper location.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 180+, for positioning a plurality of objects relative to each other.
286, for a straightline light ray alignment device.
290, for a straightline light ray level device.
412, for a straightedge type shift alignment.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclasses 104+ for surface testing.
- 356, Optics: Measuring and Testing, subclass 600 for flatness testing, subclass 153 for alignment of axes nominally coaxial, and subclass 399 for alignment in a lateral direct.

534 Angle:

This subclass is indented under subclass 501. Subject matter wherein the contact member sets up an angular relationship or the gauge includes an angle determining device.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 1+, for an angular measurement and an angular position transducer.
- 281, for vertical and horizontal angle measurements by straight line light rays.
- 282+, for a vertical angle measurement by straight line light rays.
- 285, for a horizontal angle measurement by straight line light rays.
- 424, for a straightedge type instrument having a square pivoted straightedge and a protractor.
- 508, for an angular measurement used in golf stance, swing or club analysis.
- 511+, for an angle measurement used in an anatomical gauge.
- 530, for a pitchometer which measures the pitch or angle of a propeller or turbine blade.
- 569+, for adjustable work supports which position a workpiece support at known angles.

535 Squareness:

This subclass is indented under subclass 534. Subject matter wherein the contact member checks for a ninety degree angle formed by one side of an article and an adjacent side of the same article.

536 Sine, cosine or tangent bar:

This subclass is indented under subclass 534. Subject matter wherein the contact member forms a plane which makes an angle with a known plane, the angle being defined in terms of a sine, cosine or tangent trigonometric function.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 531+, for an internal or external taper gauge using a bar.
- 537, for an adjustable article support to position an article by a sine, cosine or tangent bar.
- 567, for a gauge block, per se.

537 Article support:

This subclass is indented under subclass 536. Subject matter wherein the contact member is an article support.

538 Fixed pivot at one end:

This subclass is indented under subclass 536. Subject matter wherein there is a fixed pivot point for the contact member close to one of its ends.

539 Lock or key:

This subclass is indented under subclass 501. Subject matter which includes a contact member to (a) contact a lock, pin or lever position on a key or (b) contact a pin or lever of a cylinder lock.

SEE OR SEARCH CLASS:

- 70, Locks, subclasses 336+ for a key.

540 Cylinder lock tumbler decoder:

This subclass is indented under subclass 539. Subject matter wherein the contact each pin or lever of the lock to determine the shape of a key which will unlock the lock.

SEE OR SEARCH CLASS:

- 70, Locks, subclasses 266+ for a dock operating mechanism and subclass 394 for key picking.

541 Postage stamp or mechanical coupling gauge:

This subclass is indented under subclass 501. Subject matter wherein the contact member (a) checks the edge serrations of a postage stamp or (b) touches a mechanical coupling part.

- (1) Note. A mechanical coupling part includes hose, tube and railway car couplings.

542 Internal:

This subclass is indented under subclass 501. Subject matter wherein the contact member contacts the inside of a passageway or cavity within an object or the earth.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 178, for an internal circular size gauge.
- 509+, for bowling ball gauges to determine where to drill the finger hole positions in a ball.
- 531, for an internal taper gauge.

542.1 Telescoping caliper or stem gauge:

This subclass is indented under subclass 542. Subject matter wherein the gauge has contact members which are movable so as to conform to an inside dimension of a workpiece.

- (1) Note. If the caliper has indication for giving an indication of the distance between the contacts, see subclasses 33-783.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 501.09, for hand held comparator.
- 783, for telescoping calipers with a distance indicator.

543 Concentricity or eccentricity:

Subject matter under 542 wherein the passageway or cavity has an axis and the contact member determines if points of the passageway or cavity are or are not at the same distance from the axis.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 550, for an external concentricity gauge having a support for a gauged article.
- 556+, for a movable contact probe to test external concentricity.

543.1 Fluid type:

This subclass is indented under subclass 542. Subject matter, wherein a fluid pressure moves a probe into contact with an object being gauged or is used for gauging.

544 Earth cavity or tube:

This subclass is indented under subclass 542. Subject matter wherein the passageway or cavity is a pipe, casing, or hole in the earth.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 178, for internal or external size of circular objects including bore hole size.
- 304+, for a borehole direction or inclination indication of force traversing natural media.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclass 152.01 for a borehole and drilling study.
- 250, Radiant Energy, subclasses 256+ for well testing apparatus and methods.
- 324, Electricity: Measuring and Testing, subclasses 323+ for subsurface testing including a borehole and subclass 220 for magnetic sensor testing within a pipe or borehole.
- 356, Optics: Measuring and Testing, subclasses 241.1+ for bore inspection.
- 367, Communication, Electrical: Acoustic Wave Systems and Devices, subclasses 81+ for wellbore telemetering.
- 600, Surgery, subclasses 101+ for an endoscope.

544.1 Including means to rotate probe:

This subclass is indented under subclass 544. Subject matter having means to turn the contact member about a longitudinal axis of the earth cavity or tube.

544.2 Having means to actuate probe:

This subclass is indented under subclass 544. Subject matter including means to move the contact member into contact with an object to be gauged.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 543, for concentricity or eccentricity gauge.

544.3 Biased probe:

This subclass is indented under subclass 544.2. Subject matter having resilient means to urge the contact member into contact with the passageway or cavity.

544.4 Tapered probe:

This subclass is indented under subclass 542. Subject matter wherein the contact member has a contact surface which is symmetrical about an axis and decreases gradually in size in a dimension perpendicular to the axis.

544.5 Having more than two probes:

This subclass is indented under subclass 542. Subject matter having at least three contact members that contact an object.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

542.1, for telescoping caliper or stem gauge with two probes.

544.6 Only three probes:

This subclass is indented under subclass 544.4. Subject matter wherein exactly three probes are used for gauging.

545 Comparison with a standard:

This subclass is indented under subclass 501. Subject matter which includes a standard to compare the sensing of an article by the contact member with a corresponding distance of the standard.

(1) Note. The standard includes a master article, a template or a curve.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

501.06, for a beam terminal comparator.

546 Profile:

This subclass is indented under subclass 545. Subject matter wherein the purpose of the test is for comparing the shape of the tested article with the shape of a standard.

(1) Note. The comparison may involve tolerance between the tested article and the standard.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

519, for a cam profile test.

521, for an earth surface profile or a road grade profile test.

551+, for an external profile test which includes a tested object support.

556+, for an external profile test using a movable contact probe.

547 Optical comparison:

This subclass is indented under subclass 546. Subject matter which includes a projection screen having a curve to compare a point on the article contacted by the contact member by projecting the point unto the corresponding point on the curve on the screen.

548 Plural tests:

This subclass is indented under subclass 501. Subject matter which includes more than one contact member to measure more than one geometrical characteristic of an object.

(1) Note. This subclass is not restricted to an integral mount for all of the testing devices.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

552, for plural contact members to indicate the profile of an object when it is supported during the test.

577, for plural contact members used in a single test.

560, for plural contact members with or without a transducer responsive to a contact members.

549 With support for gauged article:

This subclass is indented under subclass 501. Subject matter which includes structure to hold an article while being gauged by the contact member.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

515, for a gauge having a support for human being.

568+, for linear or angular change of work-piece position.

573, for an article support, per se, used in a gauge of subclasses 501+.

550 Concentricity:

This subclass is indented under subclass 549. Subject matter wherein the article has an external surface having an axis of symmetry and the contact member contacts points on the external surface to determine whether the points are at the same distance from the axis or not.

(1) Note. Eccentricity testing is here.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 543, for an internal concentricity or eccentricity gauge.
- 556+, for an external concentricity or eccentricity gauge.

551 Profile:

This subclass is indented under subclass 549. Subject matter wherein the contact member examines the held article for the shape of the gauged article.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 519, for a cam profile.
- 521, for an earth or road profile.
- 530, for a profile of a propeller
- 546+, for an external profile test by comparison with a standard profile which may be a curve of a standard profile.
- 556+, for an external profile test having a movable contact probe.

552 Having plural contact members:

This subclass is indented under subclass 551. Subject matter wherein the shape of the article is examined by plural contact members.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 546+, for a profile test which involves comparison with a standard.
- 557, for a profile test using plural movable probes.

553 Member contacts successive points on the article:

This subclass is indented under subclass 551. Subject matter wherein the contact member is movable to contact successive points on the held article.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 546+, for a profile test where a standard profile is compared with the profile of tested article.
- 552, for a profile test using plural contact members where a member contacts successive points on an article.
- 554, for contact member which successively contacts a plurality of points on an object and a recording is made of each contact.

554 With recording of contact member position at each point on the article:

This subclass is indented under subclass 553. Subject matter wherein a recording means is responsive to the position of the movable contact member contacting the article at each point to show the profile of the article.

555 Having indicator of probe position or movement:

This subclass is indented under subclass 549. Subject matter wherein the contact member is movable when gauging the supported article and there is an indicator responsive to the movement or position of the contact member.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 125+, for a distance gauge determining one dimension.
- 503, for a coordinate machine.
- 531+, for an internal or external taper gauge.
- 534+, for an angle measurement.
- 542+, for an internal gauge.
- 545+, for a gauge including comparison with a standard.
- 548, for plural tests.

555.1 Circular size:

This subclass is indented under subclass 501. Subject matter wherein the contact member contacts a point on the external surface of a circular article to determine the size of the article.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 501.05+, for comparing the size of a circle.
- 542+, for internal circular size.

SEE OR SEARCH CLASS:

- 194, Check-Controlled Apparatus, subclasses 344+ for analogous structure in check testers.
- 279, Chucks or Sockets, subclass 111, for chucks provided with means to indicate the size of opening of the jaws.

555.2 Aperture type:

This subclass is indented under subclass 555.1. Subject matter wherein the contact member has a series of holes or a single adjustable hole to determine the size of the circular article.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 514.1, for hole type ring gauge.

555.3 “V” type:

This subclass is indented under subclass 555.1. Subject matter having two angularly related contact members and the article contacts the surface of the members to determine its size.

555.4 Flexible band type:

This subclass is indented under subclass 555.1. Subject matter wherein the contact member is wrapped around the circular object.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 561.2, for a flexible band used for determining the shape of an object.

556 Having a movable contact probe:

This subclass is indented under subclass 501. Subject matter wherein the contact member is movable when in use as a gauge and includes an indicator responsive to the contact member.

- (1) Note. Adjustment of a contact member and the fixed in position when a gauging step is performed is in subclass 501.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 555, for an indicator responsive to a movable contact probe with a support for probe sensed article.
- 572, for a support, per se, for a contact probe.

557 Plural probes;

This subclass is indented under subclass 556. Subject matter wherein there is more than one member and the indicator may be responsive to more than one member.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 548, for plural gauges involving plural contact probes.
- 552, for a supported article gauged for profile by plural probes.
- 560, for plural contact probes with or without a transducer responsive to a probe.

558 Electrical switch or transducer responsive to probe or probe is part of electrical circuit:

This subclass is indented under subclass 556. Subject matter wherein (a) an electric switch or an electrical transducer is responsive to the probe or (b) the contact member is part of the electrical circuit and the indicator is responsive to the switch transducer or the contact member.

558.01 Pivoted probes (e.g., divider, caliper, etc.):

This subclass is indented under subclass 501. Subject matter wherein there is more than one contact member and they are movable about a point.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 27.02, for a compass.
- 797, for a pivoted type implement with measuring means.

558.02 Proportional:

This subclass is indented under subclass 558.01. Subject matter having two pairs of contact members so interconnected that a movement of one pair produces a proportional movement of the other.

- (1) Note. These implements are used in laying out distances proportional to other distances.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 663, for proportional line segmenter.

558.03 Point parallelizing:

This subclass is indented under subclass 558.01. Subject matter having means for maintaining the extremities at the contacting members in parallel relation at all points of adjustment.

558.04 Having adjustable legs:

This subclass is indented under subclass 558.01. Subject matter including means to move or hold legs of the gauge in a desired position.

558.05 By screw means:

This subclass is indented under subclass 558.04. Subject matter wherein the legs are moved by a rotatable threaded member.

558.06 Tangent:

This subclass is indented under subclass 558.05. Subject matter wherein the screw is arranged to tangentially engage with an arc structure having a joint as its center.

558.07 Median:

This subclass is indented under subclass 558.05. Subject matter wherein the screw adjustment means is arranged in a median line with relation to the legs.

558.08 Quick adjustment:

This subclass is indented under subclass 558.05. Subject matter including means to initially position the legs.

558.09 Having opposed threads:

This subclass is indented under subclass 558.05. Subject matter including a threaded member having left and right helices so that rotation of said member causes relative movement in opposite direction between the legs.

558.1 Rotatable nut:

This subclass is indented under subclass 558.05. Subject matter wherein an internally threaded member is rotated to cause the legs to move.

558.2 Plural legs or contact probes:

This subclass is indented under subclass 558.01. Subject matter wherein there are more than one leg or contact member.

558.3 Removable probe:

This subclass is indented under subclass 558.01. Subject matter wherein at least one contact member can be removed from an element holding it.

558.4 Pivoted probe:

This subclass is indented under subclass 558.01. Subject matter wherein the contact member is movable about a point with respect to an element holding it.

558.5 Median handle:

This subclass is indented under subclass 558.01. Subject matter including a handle arranged to project from the pivot in a line median to the legs and extended through the pivot.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

558.07, for a median handle where the handle is part of the screw adjustment means.

559 Movable contact probe, per se:

This subclass is indented under subclass 501. Subject matter which includes only the contact member with or without a transducer responsive to the contact member.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

549, for supported article gauged by movable contact probe.

556, for an indicator responsive to a movable contact probe.

560 Plural probes:

This subclass is indented under subclass 559. Subject matter wherein there is more than one probe.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

552, for a supported article gauged for its profile by plural contact members.

557, for plural movable contact probes with at least one indicator responsive to a probe.

561 With electrical switch or transducer responsive to probe:

This subclass is indented under subclass 559. Subject matter wherein there is an (a) electric switch or (b) electric transducer responsive to the contact member or the contact member forms part of an electric closure device.

- (1) Note. The term “electric” includes a magnetic, piezoelectric or electrostatic transducer.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 558, for an indicator responsive to a probe actuated electrical switch or electrical transducer, or probe part of an electrical circuit.

SEE OR SEARCH CLASS:

- 200, Electricity: Circuit Makers and Breakers, subclass 61.62 for a special application circuit maker responsive to a feeler moving into contact with an object.
324, Electricity: Measuring and Testing, subclasses 754+ for an electrical probe.

561.1 Conformer or adjustable curve template:

This subclass is indented under subclass 501. Subject matter wherein the contact member is so constructed that when pressed against an object it will conform to the same and when removed it will retain a shape corresponding to the shape of the object or the contact member can be formed to a desired shape.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 514.2, for a conformer used on human.
562+, for fixed type template.

SEE OR SEARCH CLASS:

- 223, Apparel Apparatus, subclasses 12+ and 24+ for combined conformer and stretcher.

561.2 Flexible type:

This subclass is indented under subclass 561.1. Subject matter wherein the contact member is able to bend or change shape without breaking.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 555.4, for a flexible band used for determining the size of an object.
562+, for a template.

561.3 Including plural adjustment means:

This subclass is indented under subclass 561.2. Subject matter having means for moving different areas of the flexible contact member to a desired shape.

562 Template:

This subclass is indented under subclass 501. Subject matter wherein the contact member is a pattern used to (a) gauge an article, (b) guide a tool (c) form symbols used in writing, (d) form lines or (e) figures used in layout work or drafting.

- (1) Note. A “template” is a guide or a pattern for manufacturing, layout, or repair of articles, a pattern for gauging, or a guide for making alphabetical, numerical or other type symbols or representations of three dimensional objects as two dimensional objects on plans.

SEE OR SEARCH CLASS:

- 144, Woodworking, subclass 372 for a process of mechanical routing or grooving by using a template or pattern and subclass 144.51 for a templet used in shaping of woodwork.
408, Cutting by Use of Rotating Axially Moving Tool, subclass 115 for an axially moving tool with a work clamp with an adjustable tool guiding jig and subclass 241 for a drill guide.
409, Gear Cutting, Milling or Planing, subclass 130 for a template to be used with a milling cutter.

563 Single sheet type:

This subclass is indented under subclass 562. Subject matter wherein the pattern is a solitary member having two parallel side surfaces having the sides separated by a minimal thickness.

564 Alphabetical or numerical symbol type:

This subclass is indented under subclass 563. Subject matter wherein the member has a partial or complete outline for a character which is

representation of an alphabetical or arithmetical character.

SEE OR SEARCH CLASS:

434, Education and Demonstration, subclass 159 for alphabet letter formation and subclasses 163+ for writing or printing by hand by tracing with or without the use of a slotted path.

565 Geometrical figure, three dimensional to two dimensional figure or curve:

This subclass is indented under subclass 563. Subject matter wherein the pattern is a plane geometrical figure or a representation of a three dimensional object in two dimensional form or a curve not provided for elsewhere.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

177, for a curve ruler type gauge.

566 Line or guide:

This subclass is indented under subclass 563. Subject matter wherein the pattern includes an outline of various types of lines or a guide for a margin or a border.

(1) Note. The lines include solid, dotted, center-lines, break lines and hatch lines.

567 Surface plate or gauge block:

This subclass is indented under subclass 501. Subject matter which includes (a) a precision surface to support an article for gauging or layout purposes or (b) a precision gauge having surfaces parallel or at an angle to each other wherein the distance between or the angle between the surfaces is accurately known.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

1, for a table layout.

534+, for angle measurement.

SEE OR SEARCH CLASS:

248, Supports, subclasses 346.01+ for supporting bases.

269, Work Holders, subclass 8 for a magnetic work holder and subclass 289 for a work underlying support.

451, Abrading, subclass 46 for a process of gauge grinding.

567.1 Adjustable gauge block:

This subclass is indented under subclass 567. Subject matter wherein the gauge block is made of several parts and has means to move or hold the parts in a desired position.

568 Work support adjustment:

This subclass is indented under subclass 501. Subject matter wherein the contact member supports a workpiece and includes means to vary the position of the member in precise manner.

(1) Note. Linear or angular adjustments are in this group of subclasses.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

537, for an adjustable angular work support of the sine, cosine or tangent bar type.

549, for a gauge with an article support.

573, for a work support, per se.

SEE OR SEARCH CLASS:

108, Horizontally Supported Planar Surfaces, subclasses 1+ for a tiltable surface, subclasses 20+ for a power driven surface, subclasses 137+ for a horizontally adjustable surface and subclasses 144.11+ for a vertically adjustable surface.

248, Supports, subclasses 127+ for a stand and subclasses 200+ for a bracket.

269, Work Holders, subclasses 55+ for a holder mounted for movement, particularly subclasses 63+ for a holder with indexing steps.

569 Rotary:

This subclass is indented under subclass 568. Subject matter wherein the contact member has a center of rotation and the means to vary the position of the member has structure to change the angular position of the member.

(1) Note. Indexing and dividing heads are here.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

1, for an angle measurement.

534+, for an angle gauge.

SEE OR SEARCH CLASS:

- 29, Metal Working, subclass 35.5 for plural diverse manufacturing apparatus with turret mechanism including a tool turret.
- 74, Machine Element or Mechanism, subclasses 813+ for a rotary member or shaft indexing.
- 269, Work Holders, subclasses 58+ for a movable holder including means to shift the holder position and subclasses 63+ for a movable work holder with indexing steps.
- 279, Chucks or Sockets, subclass 5 for angularly adjustable or indexing chucks or sockets.
- 451, Abrading, subclasses 364+ for a work holder for use in abrading.

570 Pin and slot type:

This subclass is indented under subclass 569. Subject matter wherein the structure to change the angular position of the member includes slots or holes about a center of rotation and a peg inserted into a selected slot or hole.

571 With scale:

This subclass is indented under subclass 501. Subject matter which includes a graduated indicator.

572 Probe support:

This subclass is indented under subclass 501. Subject matter which includes a support, per se, for a contact member not provided for elsewhere.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 537, for a movably supported sine, cosine or tangent bar.
- 549+, for a movably supported contact member gauge with or without an indicator responsive to the member and an article support with the gauge.
- 556+, for movably supported contact member with or without an indicator responsive to the member.
- 562, for a template and its support.
- 568+, for a movably supported contact member work support to accurately position the member angularly or linearly.

573**Work support:**

This subclass is indented under subclass 501. Subject matter which includes a work support, per se, for supporting an article when gauged by a contact member.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 515, for a gauge having a support for a human being.
- 537, for a sine, cosine or tangent bar with an article support.
- 549+, for a gauge having a support for an article gauged by a contact member.
- 568+, for an article support which can change, in a precise way, the linear or rotary position of a point on the support.

574**POINT MARKER GUIDE:**

This subclass is indented under the class definition. Subject matter which comprises means to direct the path of a point marker towards a pre-determined point.

SEE OR SEARCH CLASS:

- 30, Cutlery, subclasses 366+ for a pointed perforating or indenting implement which may be used as a point marker.
- 234, Selective Cutting (e.g., Punching), appropriate subclasses, for selective punching devices which may be used as point markers.
- 408, Cutting by Use of Rotating Axially Moving Tool, subclass 72 for an axially moving cutter with work engaging structure including a bushing guide for the cutter and subclasses 241 for a drill guide including a drill bushing.

575**Button or buttonhole marker guide:**

This subclass is indented under subclass 574. Subject matter wherein the means to direct the path of a point marker guides the marker to mark the location of a button or a slit in some material to accommodate a button.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 662, for a button or button location or size gauge.

- SEE OR SEARCH CLASS:
24, Buckles, Buttons, Clasps, etc., sub-classes 572+ for a button and sub-classes 659+ for a button hole.
- 576 With workpiece support:**
This subclass is indented under subclass 575. Subject matter which includes a structure to hold an article against the force of gravity so that the means to direct the point marker can guide the marker to mark the article.
- SEE OR SEARCH CLASS:
248, Supports, for supports of general utility, especially subclasses 127+ for stand-type supports.
- 577 With support for workpiece:**
This subclass is indented under subclass 574. Subject matter which includes a structure to hold an article against the force of gravity so that the means to direct the point marker can guide the marker to mark the article.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
576, for a support to hold a workpiece with a button or button hole marker or guide.
- SEE OR SEARCH CLASS:
248, Supports, for supports of general utility, especially subclasses 127+ for stand-type supports.
- 578 For plural markers:**
This subclass is indented under subclass 574. Subject matter which includes means to direct the paths of a plurality of markers.
- 579 For marker movement in direction of marker axis:**
This subclass is indented under subclass 574. Subject matter wherein a point marker has an axis and the means to direct the path of the marker allows movement in the direction of the marker axis.
- 600 Automotive:**
This subclass is indented under subclass 501. Subject matter wherein the gauge contacts a self-powered road vehicle or a vehicle part.
- 601 Mechanical engine timing by piston contact in engine cylinder:**
This subclass is indented under subclass 600. Subject matter wherein the gauge contacts a piston within an engine cylinder of an internal combustion engine to note the piston position axially in the cylinder.
- (1) Note. This subclass includes gauges for timing the exhaust or intake valve with respect to the piston position in the cylinder.
- (2) Note. This subclass includes gauges for timing ignition by checking the position of the piston in a cylinder.
- 602 Distributor point setting:**
This subclass is indented under subclass 600. Subject matter wherein the gauge contacts (a) a distributor cam and the movable electrical contact of the distributor associated with the cam, (2) the fixed and the movable electrical contacts of a distributor to set the contact separation or (c) dual ignition contacts, to set the angular separation of the contacts.
- 603 Connecting rod:**
This subclass is indented under subclass 600. Subject matter wherein the gauge contacts (a) an internal combustion engine connecting rod or (b) a connecting rod pin in the bore of the rod to test some geometrical relationship with respect to the rod or rod pin.
- (1) Note. Gauges of this subclass type may test for the straightness of the connecting rod, the parallelism of the crankshaft bore and the piston pin bore, or the offset portions of the connecting rod.
- 604 With piston:**
This subclass is indented under subclass 603. Subject matter wherein the gauge contacts the piston attached to the connecting rod.
- 605 Piston, piston ring, or crankshaft:**
This subclass is indented under subclass 600. Subject matter wherein the gauge contacts (a) a piston or a piston bushing in a piston pin opening, (b) a piston ring or (c) a main shaft of an internal combustion engine, to gauge some characteristic of the part contacted.

SEE OR SEARCH THIS CLASS, SUBCLASS:

604, for gauges for pistons with connecting rods.

606 Power train:

This subclass is indented under subclass 600. Subject matter wherein the gauge contacts a part which controls or transmits mechanical motion from the engine to the wheels of a vehicle.

(1) Note. For purposes of classification in this subclass, the term "power train" encompasses clutches, manual or automatic transmissions, drive shafts and differentials.

(2) Note. The gauges of this subclass type generally contact a second power train part associated with the first part to check some relationship between the two parts.

607 Fuel pump, injection nozzle or valve, or carburetor:

This subclass is indented under subclass 600. Subject matter wherein the gauge contacts at least a part of a (a) fuel pump, (b) injection nozzle, (c) nozzle seat or (d) carburetor.

(1) Note. Gauges of this subclass type generally contact a second fuel system part associated with the first part to check or determine a geometrical measurement.

608 Frame alignment:

This subclass is indented under subclass 600. Subject matter wherein the gauge contacts a vehicle frame to set known distances or to check known distances to points on the vehicle from points external to the vehicle or from other points on the vehicle.

(1) Note. Subject matter of this subclass type includes the contact member with or without scales or other parts of complete alignment gauges.

609 Brake:

This subclass is indented under subclass 600. Subject matter wherein the gauge contacts a vehicle brake element.

(1) Note. Gauges of this subclass type generally contact another part of the vehicle to check or determine a geometrical measurement.

610 Drum or shoe:

This subclass is indented under subclass 609. Subject matter wherein the element is a wheel brake drum or a brake shoe.

611 Engine valve, valve stem, or tappet:

This subclass is indented under subclass 600. Subject matter wherein the gauge contacts an intake or exhaust valve of an internal combustion engine, or a part of the valve actuating mechanism, to determine some geometrical distance with respect to the part being contacted or to some other part of the engine.

(1) Note. This subclass includes gauges for (a) measuring the length of an intake or exhaust valve, (b) the distance between the intake or exhaust valve stem end and the motor block or (c) the length of a valve stem by gaging the distance between a valve seat on a motor block and a valve tappet.

612 Torsion bar:

This subclass is indented under subclass 600. Subject matter wherein the gauge contacts a torsion bar of a vehicle to check the height of the suspension on each side of the vehicle.

613 Collocating:

This subclass is indented under subclass 501. Subject matter wherein the gauge contacts a first part and a second part to (a) verify the alignment or proper mutual arrangement of the two parts, or to (b) check or (c) set the distance or spacing between the two parts. Note. The two parts may be two different objects. Under "SEARCH THIS CLASS, SUBCLASS", cancel the 144+ note.

SEE OR SEARCH THIS CLASS, SUBCLASS:

144+, for devices designed both for positioning track rails with relation to each other and for testing the distances between those already in use.

179.5, for gauges used to determine the proper relationship of axes of spur gears to produce proper meshing.

666+, for gauges used in marking points regardless of whether objects are to be located at the marked points.

SEE OR SEARCH CLASS:

29, Metal Working, subclasses 700+ for a gauge combined with means for assembling.

614 Printing member registration:

This subclass is indented under subclass 613. Subject matter wherein the gauge contacts a printing element and (a) a support for the printing element, (b) a second printing element or (c) a sheet to be printed by the printing element.

(1) Note. The term “printing element” includes (a) a photographic negative or positive, (b) printing type, or (c) a printing plate.

615 Photos:graphic member or holder with respect to surface:

This subclass is indented under subclass 614. Subject matter which includes (a) a support and (b) a photos:graphic element or element holder, and (c) positioning means including a contact member to position the photos:graphic element or element holder with respect to the support.

(1) Note. Subject matter of this subclass type includes a positive or negative exposed, developed and fixed film, plate or sheet material positioning device.

616 Transparent registration sheet to align printing on member:

This subclass is indented under subclass 614. Subject matter wherein the gauge is a see-through sheet having printing thereon for superpositioning on a printing member whereby the alignment of printing on the member may be compared with the printing on the sheet.

(1) Note. For purposes of classification in this subclass, “translucent” is considered to be included within the meaning of the term “transparent”.

617 Printing type or plate:

This subclass is indented under subclass 614. Subject matter wherein the gauge contacts (a) a printing element having a raised symbol which may be grouped with other similar elements to from the printing to be printed, or (b) a composited element having plural symbols forming the printing to be printed.

618 Curved printing member with respect to its support:

This subclass is indented under subclass 617. Subject matter wherein the printing element is nonlinear and a cylinder supports the element and the gauge contacts both the element and the cylinder to align the printing element with respect to the cylinder support.

(1) Note. Subject matter of this subclass type includes collocating attachments to the support cylinder.

(2) Note. Subject matter of this subclass type includes alignment markings or the outline the elements with respect to the shape and dimension of the support cylinder.

619 Page form registration with respect to its support or to another form on same support:

This subclass is indented under subclass 617. Subject matter having one or more printing elements, each forming a page of material to be printed, and a support for the elements, wherein the gauge contacts one or more of the elements to (a) check the alignment of the elements with respect to each other, or (b) check the alignment of an element with respect to its support.

620 Plate registration with respect to second plate or printing sheet:

This subclass is indented under subclass 617. Subject matter having (a) two supported plates having points on each plate in common, or (b) a supported printing plate and a printed sheet having points in common, wherein the gauge contacts the points in common to check the alignment of the two plates or the plate and printed sheet.

621 Plate registration with respect to plate support:

This subclass is indented under subclass 617. Subject matter which includes a flat, sheet-like printing element and its support wherein the contact member contacts the printing element or its support to align or check the alignment of the printing element with respect to its support.

622 Hand stamp registration with respect to printing location on sheet to be printed:

This subclass is indented under subclass 614. Subject matter comprising a member forming (a) a straight edge or (b) a radius to locate a hand stamp on a surface at each point at which it is desired to sequentially hand print a symbol by stamping the symbol on the surface.

- (1) Note. Subject matter of this subclass type may or may not be claimed in combination with a hand stamp.

SEE OR SEARCH CLASS:

101, Printing, subclasses 368+ for a printing member, including subclass 405 for a stamp handle and subclass 371 for a mail cancelling stamp.

623 Sheet registering device:

This subclass is indented under subclass 613. Subject matter wherein the gauge is (a) mating member attached to a sheet or (b) attached to a mating member attached to a surface or to another sheet for the purpose of positioning a sheet in a predetermined location on a surface or with respect to an additional sheet.

- (1) Note. Subject matter of this subclass type includes either mating member of the registering device.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

483, for straight rules.

SEE OR SEARCH CLASS:

269, Work Holders, subclasses 53+ for a pin type holder.

283, Printed Matter, subclasses 36+ for indexes printed matter.

624 Earth contacting or working:

This subclass is indented under subclass 613. Subject matter wherein the gauge contacts a tool which touches the earth or performs some type of work on the earth or a support for such a tool.

- (1) Note. Earth working of this subclass type includes excavating or scraping the earth.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

521, for earth-contacting gauges for determining the local profile of the earth.

SEE OR SEARCH CLASS:

172, Earth Working, subclass 430 for earth working apparatus with sighting means.

625 Trenching tool depth:

This subclass is indented under subclass 624. Subject matter wherein the tool is a ditch digger and having means to gauge the depth of the digging tool in the earth.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

624, for collocating gauges for earth moving equipment used in construction or in agriculture.

SEE OR SEARCH CLASS:

37, Excavating, subclasses 350+, 353+, and 366+ for ditchers of the screw, endless bucket or plow type.

626 Tool or surrogate:

This subclass is indented under subclass 613. Subject matter wherein the first part is an instrument which does some type of work, or is a substitute for such an instrument.

- (1) Note. In the subject matter of this subclass type, the gauge contact member typically locates a tool with respect to (a) its tool holder, (b) and object to be worked on by the tool, or (c) the object support.

627 Die:

This subclass is indented under subclass 626. Subject matter wherein the instrument shapes material by force imparted to the material.

- (1) Note. The force of this subclass type may, for example, be applied to the material by punching or stamping means.

628 Cutter or shaper:

This subclass is indented under subclass 626. Subject matter wherein the instrument severs material from a workpiece.

- (1) Note. Cutter or shaping tools of this subclass type include, for example, saws, grinders, files, drills and punches.

SEE OR SEARCH CLASS:

- 30, Cutlery, subclasses 268+ for gauges which form a guide for a knife either by engagement with the material or a work table.

629 Screw thread:

This subclass is indented under subclass 628. Subject matter wherein the cutter or shaper forms the spiral of a screw thread.

- (1) Note. The threads of this subclass type include, for example, tapered, straight and ACME-type threads.

630 Cutter with respect to workpiece end:

This subclass is indented under subclass 628. Subject matter wherein the gauge contacts a cutter or a cutter support and an end of material in order to determine the length of material to be cut off.

- (1) Note. Subject matter of this subclass type may include, for example, a chain saw with a distance gauge to show the length of material to be cut off.

631 Shears:

This subclass is indented under subclass 630. Subject matter wherein the cutter is a hand held manipulable cutter having two opposed cutting edges.

SEE OR SEARCH CLASS:

- 7, Compound Tools, subclass 163 for a gauge or other measuring means in combination with a cutter.
30, Cutlery, subclass 233 for a shears in combination with a gauge.

632 Axis of rotary cutter with respect to axis of cylindrical workpiece:

This subclass is indented under subclass 628. Subject matter wherein the gauge contacts a rotary cutter and a cylindrical workpiece or a support for such a workpiece to locate the axis of the cutter with respect to the axis of the workpiece.

- (1) Note. The member contacting the workpiece typically contacts it at two points on its surface lying in a plane perpendicular to its axis and is connected to the member contacting the cutter in such a way that the axis of the cutter bisects the arc between the workpiece-contacting points and, by extension, intersects the axis of the workpiece.

633 Planar blade with respect to its holder or another part:

This subclass is indented under subclass 628. Subject matter wherein the instrument is a flat knife and the gauge contacts an adjustable support for the knife or another part of a machine containing the knife and its support.

634 With respect to its rotary holder:

This subclass is indented under subclass 633. Subject matter wherein the knife support permits movement of the knife about a center.

635 Plural blade holder:

This subclass is indented under subclass 634. Subject matter wherein there is more than one knife supported by the knife support.

636 Bit with respect to its holder:

This subclass is indented under subclass 628. Subject matter wherein the instrument is a cutter bit and the gauge contacts a machine tool cutter bit holder.

637 Boring bar holder:

This subclass is indented under subclass 636. Subject matter wherein the tool holder is a boring bar for the bit.

638 Bit with respect to workpiece or workpiece holder:

This subclass is indented under subclass 628. Subject matter wherein the instrument is a machine tool bit and the gauge contacts a workpiece or workpiece support having an axis, the gauge thus serving to assist in positioning the bit on the axis.

- (1) Note. Subject matter of this subclass type includes levels claimed in combination with the gauge to assist in determining the axis of the workpiece or workpiece support.

639 Drill or bit with respect to chuck or spindle holder:

This subclass is indented under subclass 628. Subject matter wherein the gauge contacts a drill or a machine tool bit and a socket or a spindle for the drill or the tool bit or the holder or support for such socket or spindle.

- (1) Note. In this subclass, the cutter or shaper is collocated with respect to its chuck or spindle holder either directly or indirectly by being collocated with respect to the chuck or spindle itself.

640 Circular cutter with respect to workpiece or workpiece support:

This subclass is indented under subclass 628. Subject matter wherein the cutting edge of the cutter revolves in a circular path and the gauge contacts the cutter and the workpiece or the workpiece support to locate the cutter with respect to the workpiece or workpiece support.

- (1) Note. Typically, but not necessarily, the cutting edges of the cutters of this subclass type are so oriented on the cutter with respect to the cutter's axis of rotation as to generate a cylinder when the cutter is rotated.

641 With respect to support:

This subclass is indented under subclass 628. Subject matter wherein the gauge contacts the cutter or shaper and the support for the cutter or chapter to locate the cutter or shaper with respect to its support.

642 Spindle or chuck with respect to workpiece or workpiece support:

This subclass is indented under subclass 626. Subject matter wherein the gauge includes a shaft having an axis adapted to be chucked or held by a rotating machine tool spindle and also contacts a workpiece to align the axis of the shaft with a point or plane on a workpiece to check the perpendicularity of the shaft with the workpiece.

643 Millstone with respect to millstone shaft:

This subclass is indented under subclass 626. Subject matter wherein the instrument is a grinding stone of a grain mill having an axle and the gauge contacts the axle and either the grinding stone thereon or a cooperating, fixed grinding stone to determine whether the stone is at right angles to the axle.

SEE OR SEARCH THIS CLASS, SUBCLASS:

196, for devices for testing the trueness of a millstone face.

644 Centering or point location:

This subclass is indented under subclass 613. Subject matter wherein the gauge contacts a first part and second part to position or locate (a) the first part centrally of the second part, (b) the first part centrally with respect to a dimension of the second part, or (c) a point or axis on the first part centrally with respect to a point on the second part.

645 Alignment:

This subclass is indented under subclass 613. Subject matter wherein the gauge contacts a first and second object, or a first part and a second part of one object to assist in the positioning of the two in or on a straight line.

SEE OR SEARCH THIS CLASS, SUBCLASS:

520, for gauges for centering or locating a point on a single object.

- 644, for gauges for centering a first part with respect to a second part or for locating a point on the first part with respect to a point on the second part.
- 646 Clapboard lapping:**
This subclass is indented under subclass 613. Subject matter wherein the gauge contacts a weatherboard edge for alignment.
- (1) Note. Edges of weatherboards of this subclass type includes upper, lower or side edges of the weatherboard.
- (2) Note. Gauges of this subclass type generally set the distances between the lower edge of the lower board and the lower edge of the partially-covering board to establish the area of the boards exposed to the weather.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
648+, for a collocating gauge for shingle lapping.
- 647 Having tab for supporting bottom of clapboard:**
This subclass is indented under subclass 646. Subject matter wherein the gauge has a blade to fit under the lower surface of a weatherboard.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
649, for a shingle lapping gauge having a tab to fit underneath a shingle.
- 648 Shingle lapping gauge:**
This subclass is indented under subclass 613. Subject matter wherein the gauge contacts a roof shingle for alignment.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
646+, for a collocating gauge for clapboard lapping.
- SEE OR SEARCH CLASS:
182, Fire Escape, Ladder, or Scaffold, subclass 45 for a roof scaffold and shingle gauge.
- 649 Having tab on underside of shingle:**
This subclass is indented under subclass 648. Subject matter wherein the gauge has a blade to fit next to the lower side of a shingle.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
647, for a clapboard lapping gauge having a tab to fit underneath a clapboard.
- 650 Shoe, shoe part or last:**
This subclass is indented under subclass 613. Subject matter wherein the gauge contacts a covering for a human foot or a part of the covering in order to establish a spatial relationship with a support for the covering or covering part.
- SEE OR SEARCH CLASS:
12, Boot and Shoe Making, for combinations of shoe making machines and gauges of this subclass type, particularly, subclasses 7+ for a lasting machine, subclasses 17+ for a sole machine, subclasses 42+ for a heel machine, subclasses 51+ for an upper machine, and subclasses 142+ for a process for making a boot or a shoe.
36, Boots, Shoes, and Leggings, subclass 25 for a sole, subclasses 34+ for a heel, subclasses 45+ for an upper and subclasses 83+ for a boot or shoe, per se.
- 651 Railway track or railway vehicle part:**
This subclass is indented under subclass 613. Subject matter wherein the gauge aligns railway tracks or railway vehicle parts.
- SEE OR SEARCH CLASS:
238, Railways: Surface Track, subclasses 24+ for a railroad tie, subclasses 122+ for a railroad rail and subclasses 209+ for a railroad base plate.
- 651.1 Track type:**
This subclass is indented under subclass 651. Subject matter wherein the gauge is used for checking or aligning railway track.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 287, for a track aligning means utilizing a sight line.
 338, for a track spacing and level indicating instruments.
- 652 Burner fuel emitting member with respect to electrode spacing:**
 This subclass is indented under subclass 613. Subject matter wherein the gauge contacts a fuel emitting nozzle or pipe and a electrical igniter.
- 653 Insignia with respect to garment, e.g., uniform:**
 This subclass is indented under subclass 613. Subject matter wherein the gauge is a template contacting an emblem on an article of clothing to place the emblem at a specific location on the article.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 2+, for a clothing size and shape or layout gauge.
 575+, for a button or button hole placement marker.
- SEE OR SEARCH CLASS:
 2, Apparel, subclass 246 for apparel insignia.
 40, Card, Picture, or Sign Exhibiting, subclass 1.5 for a badge.
 223, Apparel Apparatus, subclasses 66+ for a garment fitting form.
- 654 Valve:**
 This subclass is indented under subclass 613. Subject matter wherein the gauge contacts different portions of a device regulating the flow of a fluid.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 607, for a gauge for a fuel igniter valve or nozzle part.
 611, for a valve, valve stem or tappet gauge for an internal combustion engine.
- SEE OR SEARCH CLASS:
 251, Valves and Valve Actuation, subclass 356 for a valve generally.
- 655 Machine parts:**
 This subclass is indented under subclass 613. Subject matter wherein the first and the second parts are elements of a machine.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 501.13, for gauges for determining the position of axes of spur gearing to produce proper meshing.
- 656 Electrical dynamo:**
 This subclass is indented under subclass 655. Subject matter wherein the machine is an electrical-mechanical device which creates electrical power or changes electrical power into mechanical work.
- 657 Rolls, or roll and coacting part:**
 This subclass is indented under subclass 655. Subject matter wherein the machine elements include a circular cylinder associated with a second circular cylinder or the axis of a second circular cylinder, or a part associated with a circular cylinder.
- 658 Typewriter:**
 This subclass is indented under subclass 655. Subject matter wherein the machine elements are parts of a manually operated typewriter.
- 659 Watch:**
 This subclass is indented under subclass 655. Subject matter wherein the machine elements are parts of a time piece.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 203.1, for gauges for determining the form or trueness of watch wheels, per se.
- 660 Wheel quartering or crank arm, connecting rod or crank pin with respect to one or the other:**
 This subclass is indented under subclass 655. Subject matter wherein the machine elements are parts of a steam locomotive drive train.

- (1) Note. Subject matter of this subclass type includes gauges for setting the crank-pin on a locomotive drive wheel with respect to the corresponding crank-pin on the other side of the locomotive, for setting the centerline of a crank-pin with the respect to the centerline rod with respect to a crank-pin, crack or wheel of a steam engine.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

534, for angle gauges, per se.

SEE OR SEARCH CLASS:

105, Railway Rolling Stock, subclass 96 for a wheel or axle drive.

661 Plural axes center for common axis:

This subclass is indented under subclass 655. Subject matter wherein the gauge contact one of the shaft axes indicates the alignment or nonalignment of two or more shafts on a common axis.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

572, for a support for a probe to check the alignment of two shafts.

662 Button or buttonhole:

This subclass is indented under subclass 501. Subject matter wherein the gauges determines the placement of a button or buttonhole or the size of a button or buttonhole.

- (1) Note. The subject matter of this subclass type includes, for example, templates.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

2+, for an apparel gauge to ascertain the size and shape of clothing and for laying out clothing or footwear.

562+, for a template gauge, generally.

663 Proportional line segmenter:

This subclass is indented under subclass 501. Subject matter having at least three relatively movable contact members (or contact member guides) arranged so that their object-contacting points contact the object in a straight line and are so interconnected that while the distances

between the contact points may be selectively increased or decreased, the ratios of the distances between them at successive settings remain the same.

- (1) Note. One or more of the object contacting members may also function to mark the object.

- (2) Note. The guides provided for in this subclass and the subclasses indented hereunder are used generally in conjunction with markers which may not be part of the claimed invention but which are used to mark the object at points designated by the guide.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

670+, for proportionally repositionable contact members which do not contact the object at points lying in a straight line and which also have a marker for locating and marking the center of the area defined by the contact members.

664 Parallelogram type:

This subclass is indented under subclass 663. Subject matter wherein the means interconnecting the members consists of a series of crossed bars pivoted at their midpoints and at each of their ends to a succeeding group of crossed bars capable of being folded or extending to form at any particular setting a plurality of equidistant contact points.

665 Dividers:

This subclass is indented under subclass 663. Subject matter having three contact members having their object-contacting points movable along a straight line and interconnected such that the distances between the two outer contact points and the middle contact point are always equal.

666 With point marker:

This subclass is indented under subclass 501. Subject matter in combination with a visual spot marker or spot marker guide to mark or guide a marker at a location determined by the gauge.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 13, for perforated apparel patterns and charts.
- 197, for gauge employed in laying out mortise work having points to outline the mortise.
- 574, for point marker guides which do not include means to measure a geometrical characteristic of an object.

SEE OR SEARCH CLASS:

- 234, Selective Cutting (e.g., Punching), subclasses 59+ for a pattern-controlled selective punching device, and particularly subclass 89 for a pattern useable with such a device.

667 For door or drawer hinge, pull or securing means:

This subclass is indented under subclass 666. Subject matter which includes a door or hinge contact member to locate the center of a lock or holes to attach a hinge or pull on a door or drawer and a point marker or a point marker guide located on the gauge to mark the location of the lock center or holes to attach the hinge, drawer, pull or door securing means (e.g., bolts or latches).

668 For windup tape or tape casing, or marker attachment for tape:

This subclass is indented under subclass 666. Subject matter which includes (a) a distance tape, (b) a point marker attachment for a distance tape, or (c) a subcombination of a tape device, combined with the visual point marker.

669 Plural markers:

This subclass is indented under subclass 666. Subject matter wherein there are at least two visual markers or point marker guides.

670 Having marker centering means:

This subclass is indented under subclass 666. Subject matter wherein the gauge contacts an object at two points and includes means to position the marker or guide on a point equidistant from the contacted points on the object.

SEE OR SEARCH CLASS:

- 408, Cutting by Use of Rotating Axially Moving Tool, subclasses 72+ for analogous devices used as guides for center drills.

671 For marking center of hole:

This subclass is indented under subclass 670. Subject matter with means to center the marker or its guide within a hole.

- (1) Note. Subject matter of this subclass type may include a template with a hole to establish a point on an object or the center of a hole in an object.

672 Having diverging-angle bisector workpiece-contacting members with marker on angle bisector:

This subclass is indented under subclass 670. Subject matter wherein there are two contact members forming an angle between them and a support for the spot marker or its guide to position the marker or guide on a point equidistant from the contact members.

673 Having adjustable workpiece-contacting centering means:

This subclass is indented under subclass 670. Subject matter wherein the contacting members are movable to adjust the centering means to locate the guide or marker at the center of the object.

674 Pivoted caliper workpiece-contacting means:

This subclass is indented under subclass 673. Subject matter wherein the contact members turn about a center to locate the guide or marker at the center of the contacted object.

675 Rack and pinion operating workpiece-contacting means:

This subclass is indented under subclass 673. Subject matter wherein the centering contact members include a rack and gear means meshing with each other to move the members toward and away from each other to center the guide and the marker at the center of the object.

- (1) Note. The racks need not be in a straight line.

676 Having workpiece-contacting tapered centering means:

This subclass is indented under subclass 670. Subject matter which includes a cone-shaped contact surface and the marker or guide has an axis coaxial with the axis of the cone-shaped surface.

677 Having workpiece-contacting device with marking to align with workpiece marking:

This subclass is indented under subclass 666. Subject matter wherein the contact member is a visual design on a support for the spot marker or the spot marker guide which matches a design on a workpiece to locate the marker or guide at a desired point on the workpiece.

678 Angularly adjustable about an axis:

This subclass is indented under subclass 666. Subject matter wherein the contact member positions a pivot point and the point marker or the point marker guide is angularly positioned about the pivot point.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 1, for angular measurement devices.
- 277+, for a straight line ray type geometrical instrument, particularly subclass 281 for a vertical and horizontal angle measurement, subclasses 282+ for a vertical angle measurement, and subclass 285 for a horizontal angle measurement.
- 300+, for an indicator of direction of force traversing natural media, particularly subclass 341 for a measurement in plural direction or shape with a variable angle determination and subclass 343 for an angle determination.
- 418+, for a pivoted straight edge and a square, particularly subclass 434 with a protractor and subclass 421 having angle indicating means and straight edge as hypotenuse.
- 534+, for an angle gauge.
- 569+, for a rotary work support adjustment.

679 Marker located with respect to two different directions:

This subclass is indented under subclass 666. Subject matter wherein the gauge serves to locate the point marker or the guide with

respect to the workpiece at the intersection of two different paths.

- (1) Note. The point marker or guide may be movable with respect to the workpiece or the workpiece support may be movable with respect to the marker or guide.

679.1 Special scale markings:

This subclass is indented under subclass 501. Subject matter wherein the gauge is provided with indicia pertaining to a specific type of a measurement desired, wire size, pipe size or ring size.

700 DISTANCE MEASURING:

This subclass is indented under the class definition. Subject matter comprising means having indicia on it for indicating a variable length.

- (1) Note. Gauges for comparing or determining size or standard are classified in subclasses 501+.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 2+, for instruments designed for fitting apparel.
- 203+, for size or shape of tire or wheel.
- 458+, for distance measuring by a rigid straight bar.
- 501+, for gauges which include measuring as to a size, standard, etc.
- 511+, for gauging animals, humans or dental.
- 520+, for gauging a center point, distance between centers or centerline location.
- 524+, for gauging food portion.
- 545+, for a gauge comparison with a standard.
- 558.01+, for pivoted probes, e.g., divider, caliper, etc.
- 609+, for a gauge measuring a brake drum or shoe.
- 679.1, for gauges which have special scale markings.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclasses 37+, for measuring devices in which fluid pressure or fluid flow is used in the measurement or testing.

- 166, Wells, subclasses 64 and 254.1+ for well processes or apparatus including means for measuring distance.
- 356, Optics: Measuring and Testing, appropriate subclasses for optical measuring. See the Class 356 Class Definition for the subject matter in Class 33 and Class 356.
- 701 Process:**
This subclass is indented under subclass 700. Method for making distance measurement.
- 702 Error compensation (e.g., temperature):**
This subclass is indented under subclass 700. Subject matter which includes structure to make a correction of the distance measured.
- 703 Environmental isolation:**
This subclass is indented under subclass 700. Subject matter which includes structure for protecting the distance measuring means from adverse physical conditions which may affect the measurement being made.
- 704 Thermal:**
This subclass is indented under subclass 703. Subject matter wherein the adverse condition is heat or temperature.
- 705 Sealing:**
This subclass is indented under subclass 703. Subject matter wherein the adverse condition is foreign matter which is kept away from the measuring means by a barrier.
- 706 Scale reading position sensor (e.g., grid counting):**
This subclass is indented under subclass 700. Subject matter wherein the means for indicating the measured distance is a scanning element which receives pulses from a scaled element of the measuring means as the scanning element and scaled element are moved relative to each other.
- 707 Optical:**
This subclass is indented under subclass 706. Subject matter wherein the scanning element responds to light pulses.
- 708 Magnetic:**
This subclass is indented under subclass 706. Subject matter wherein the scanning element responds to a magnetic field.
- 709 Convertible to another type measuring means:**
This subclass is indented under subclass 700. Subject matter wherein a measuring device can be charged by a rearranging of parts or selective use of its parts for making different measurements provided for below.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
826, for use of interchangeable parts of different sizes.
- 710 Machine parts:**
This subclass is indented under subclass 700. Subject matter having one element of a machine moving relative to another element of the machine and means to measure the distance moved.
- 711 Rolling contact:**
This subclass is indented under subclass 710. Subject matter wherein a measuring means has an element which bears on a machine element which causes the measuring means element to rotate to determine how far the machine element has moved.
- 712 Article support integral with measuring means:**
This subclass is indented under subclass 700. Subject matter having means for holding an article which forms part of the measuring means.
- (1) Note. Means for measuring endless belts are classified here.
- 713 Sounding type:**
This subclass is indented under subclass 700. Subject matter having means for (a) ascertaining the depth of bodies of fluent material or (b) measuring the distance from a datum to the surface of fluent material.
- (1) Note. Such devices for measuring distances from an aerial vehicle to the earth's surface are here included.

- (2) Note. See the notes to the class definition of Class 73, Measuring and Testing for a statement of the line for devices for determining depths and distances by sonic or electrical wave means.
- SEE OR SEARCH CLASS:
- 73, Measuring and Testing, subclasses 290+ for means for measuring depth of liquid other than by mere measurement of distance, as by static liquid pressures, float-operated devices, propeller wheels, sight glasses, etc.
- 116, Signals and Indicators, subclass 113, for devices designed to give a signal or warning when a particular depth is reached, but not designed to measure variable depths.
- 714 With electric control means:**
This subclass is indented under subclass 713. Subject matter having electric means for moving the measuring or sounding means to a desired position.
- 715 Of line:**
This subclass is indented under subclass 714. Subject matter wherein the measuring means is a flexible line or tape.
- SEE OR SEARCH CLASS:
- 254, Implements or Apparatus for Applying Pushing and Pulling Force, subclasses 173+, for winding drums of general application provided with automatic control.
- 716 Including electric signal means:**
This subclass is indented under subclass 713. Subject matter having an electric circuit which is actuated when a fluid is contacted resulting in a visual or audible signal.
- 717 With sampling means:**
This subclass is indented under subclass 713. Subject matter combined with means for taking a small part or quantity of solid matter or fluent material.
- SEE OR SEARCH CLASS:
- 73, Measuring and Testing, subclasses 863+ for sampling structure but having no graduations.
- 166, Wells, subclass 64 for well apparatus including distance measuring means and subclasses 250.01+, for well processes involving distance and sampling.
- 718 Hole type:**
This subclass is indented under subclass 717. Subject matter wherein the sampling means has openings which hold the fluent material.
- 719 Depth indication:**
This subclass is indented under subclass 713. Subject matter having means to measure the distance from the top of a surface to the bottom.
- 720 Line with weight:**
Subject matter under 713 having a weight or bob attached to a flexible line or tape.
- (1) Note. Sounding leads, per se, are in this subclass:
- (2) Note. Stack line indicators employing a weight or rod suspended from a line to gauge material in a kiln blast furnace, etc. are in this subclass.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 716, for electric signal means and line with weight.
- 719, for measuring depth.
- SEE OR SEARCH CLASS:
- 16, Miscellaneous Hardware, subclass 403 for a paper weight and subclass 404 for other generic, weighting means.
- 721 For nongaseous material:**
This subclass is indented under subclass 713. Subject matter wherein the material being measured is a liquid or solid fluent.
- 722 Liquid (e.g., dipstick):**
This subclass is indented under subclass 721. Subject matter wherein the fluid being measured is of the liquid type.

- 723 With means to adjust measuring rod:**
This subclass is indented under subclass 722. Subject matter wherein the measuring means is a shaft or bar and includes means to move the measuring means.
- 724 Having plural contacts:**
This subclass is indented under subclass 723. Subject matter wherein a measuring means has a first means to touch the liquid and while in contact a second means to touch the liquid to indicate the top of the liquid.
- 725 With cleaning means:**
This subclass is indented under subclass 722. Subject matter having means to remove the liquid from a measuring means.
- 726 With guide:**
This subclass is indented under subclass 722. Subject matter having means to direct the course or motion of an indicator.
- (1) Note. A tube, per se, is not a guide for this subclass.
- 727 With filter or vent:**
This subclass is indented under subclass 722. Subject matter having means to prevent impurities from entering the fluid or onto an indicator, or means to permit passage or escape of gas from the fluid.
- 728 With lock means:**
This subclass is indented under subclass 722. Subject matter having means to secure an indicator so that it cannot be removed by normal operation.
- 729 Shape of indicator:**
This subclass is indented under subclass 722. Subject matter having a particular contour, form or structure.
- 730 With holder or housing for indicator:**
This subclass is indented under subclass 722. Subject matter having means to support or enclose an indicator.

- 731 Including seal:**
This subclass is indented under subclass 730. Subject matter having means for preventing matter from entering into, passing through, or escaping from the fluid.
- 732 Of flexible material:**
This subclass is indented under subclass 700. Subject matter having means to measure material which is able to bend without breaking.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
436, for a straight edge adapted to measure flexible material.
772, for general rolling contact measurers.
- 733 Supply (e.g., bolt, roll):**
This subclass is indented under subclass 732. Subject matter wherein the material is measured while in a bolt or package form.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
761, for a flexible tape reel having a projection through which the tape may be passed between the layers of the supply.
- 734 By rolling contact:**
This subclass is indented under subclass 732. Subject matter having means adapted to bear on the material and caused to rotate by relative movement between the measuring means and material.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
772, for a rolling contact measuring means of general use.
- 735 With computing means:**
This subclass is indented under subclass 734. Subject matter, including means for performing calculations, so that the result will indicate terms other than length.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
773, for a computer and a rolling contact means of general use.

- SEE OR SEARCH CLASS:
 235, Registers, subclasses 61+ for mechanical computers.
 700, Data Processing: Generic Control Systems or Specific Applications, appropriate subclasses for particular data processing applications.
 708, Electrical Computers: Arithmetic Processing and Calculating, appropriate subclasses for computers performing calculations in general.
- 736 With particular electric output or circuit:**
 This subclass is indented under subclass 734. Subject matter including an electronically operated read out measuring means or electrical elements for carrying current which control at least part of the measuring means or indicating means.
- 737 With recording or marking means:**
 This subclass is indented under subclass 734. Subject matter including means to make a record of the measurement or to mark the material being measured.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
 751, for marking means of general use.
- 738 Having rectilinear scale:**
 This subclass is indented under subclass 734. Subject matter wherein the means to indicate distance is restricted to move in a straight path.
- 739 With signal means:**
 This subclass is indented under subclass 734. Subject matter including means to produce an audible or visual manifestation of a position or amount of a supply.
- (1) Note. A visual length indicator is not a signal means.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
 750, for signal means of general use.
- SEE OR SEARCH CLASS:
 83, Cutting, subclasses 63+ for cutting machines including signal means.
 235, Registers, subclass 128 for a register including a signal means.
- 740 With stop means:**
 This subclass is indented under subclass 734. Subject matter provided with means capable of bringing any or all of the moving parts of the measuring means or supply of flexible material to a halt.
- 741 For motor:**
 This subclass is indented under subclass 740. Subject matter wherein a motor is stopped.
- 742 By clutch:**
 This subclass is indented under subclass 740. Subject matter having means for making a temporary connection between the moving parts.
- 743 Combined:**
 This subclass is indented under subclass 734. Subject matter, to which has been added a subcombination or assembly which is recognized as subject matter of some other class.
- 744 Belt type:**
 This subclass is indented under subclass 734. Subject matter wherein the means that bears on the material is an endless band.
- 745 Zero setting means:**
 This subclass is indented under subclass 734. Subject matter includes means to turn the measuring means back to zero.
- 746 Rotating and stationary surfaces:**
 This subclass is indented under subclass 734. Subject matter wherein the surface of a rotatable member bears on a nonmovable surface while the material is moved between them.
- 747 Opposed rotating surfaces:**
 This subclass is indented under subclass 734. Subject matter wherein the material is moved between rotatable members.
- 748 Plural:**
 This subclass is indented under subclass 747. Subject matter wherein there are more than two rotatable members.
- 749 Only three:**
 This subclass is indented under subclass 748. Subject matter having only three rotatable members.

- 750 Predetermined stop or signal means:**
Subject matter under subclasses 732 including means bringing the measuring means to a halt or producing an audible, visual or other manifestation when a set length of material has passed.
- 751 With marking means:**
This subclass is indented under subclass 732. Subject matter including means to mark the work or material being measured.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
737, for material marking means with a roller type measuring means.
- 752 With ratchet means to move indicator:**
This subclass is indented under subclass 732. Subject matter including a wheel with teeth adapted to be engaged by a pawl which imparts intermittent motion to the wheel which moves the indicator.
- 753 With gear means to move indicator:**
This subclass is indented under subclass 732. Subject matter including a toothed wheel and means to move the toothed wheel which moves the indicator.
- 754 With take up reel:**
This subclass is indented under subclass 732. Subject matter including means that rotate and receive the material after it has been measured.
- 755 By flexible tape:**
This subclass is indented under subclass 700. Subject matter wherein a measuring means is made of a material which is able to bend without breaking.
- 756 Cord type:**
This subclass is indented under subclass 755. Subject matter wherein a measuring means is in the form of a rope or thread.
- 757 Means to keep tape straight:**
This subclass is indented under subclass 755. Subject matter wherein the tape shape or structure prevents the tape from bending when extended.
- 758 With adhesive or securing means:**
This subclass is indented under subclass 755. Subject matter including means that will hold the measuring means permanently to an object being measured by sticking, clinging or fastening.
- (1) Note. A hook at the end of a tape is means for temporary holding the tape to an object.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
770, for a hook attachment.
- 759 Specified use:**
This subclass is indented under subclass 755. Subject matter wherein the measuring means has a special shape, attachment or condition so that it is used to measure a particular device or in a particular environment, e.g., ball field or underwater.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
758, for measuring means that are secured to an element which can be used in specified areas.
763, for computing means which read out is other than measurement.
- 760 Combined:**
This subclass is indented under subclass 755. Subject matter to which has been added a sub-combination or assembly which is recognized as subject matter of some other class.
- 761 Specified reel housing feature:**
This subclass is indented under subclass 755. Subject matter having a particularly described structure to contain the tape.
- 762 With meter:**
This subclass is indented under subclass 761. Subject matter including means for indicating the distance.
- 763 Including computing means:**
This subclass is indented under subclass 762. Subject matter having means for performing mathematical operations, so that the result will be indicated in other terms than length units.

- 764 Plural tapes:**
This subclass is indented under subclass 761. Subject matter having more than one tape in the housing.
- 765 Opening in housing for reading tape:**
This subclass is indented under subclass 761. Subject matter wherein the housing has an aperture in which the tape can be seen.
- 766 Inside-outside measure:**
This subclass is indented under subclass 761. Subject matter including means for measuring the inside or outside of an object.
- 767 Including brake or lock:**
This subclass is indented under subclass 761. Subject matter having means for preventing rotation of or means to hold the tape at a certain position.
- 768 Including attachment:**
This subclass is indented under subclass 761. Subject matter wherein an element is added to the tape or housing to help in measuring or wherein the tape is so shaped that it can be attached to a housing.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
770, for attachments with no specified reel housing features.
- 769 Housing shape, structure or material:**
This subclass is indented under subclass 761. Subject matter having a particular configuration for the housing means to support the tape housing or specified material the housing is made of.
- 770 Including attachment:**
This subclass is indented under subclass 755. Subject matter wherein an element is added or held on the tape or housing to help in measuring.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
757, for attachments to keep a tape straight.
768, for attachments and specified housing features.
- 771 Specified tape material:**
This subclass is indented under subclass 755. Subject matter having a particularly described material for the tape.
- 772 Of length by rolling contact:**
This subclass is indented under subclass 700. Subject matter having means adapted to bear on the material and caused to rotate by relative movement between the measuring means and material to determine the length of the material.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
734, for a rolling contact measuring means on flexible material.
- 773 With computing means:**
This subclass is indented under subclass 772. Subject matter including means for performing calculations so that the result will indicate terms other than length.
- (1) Note. See search notes, subclass 735.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
124, for similar devices used in determining area.
735, for a computing and a rolling contact means on flexible material.
- 774 Having rectilinear indicator:**
This subclass is indented under subclass 772. Subject matter wherein an indicator is restricted to move in a straight path.
- 775 Combined:**
This subclass is indented under subclass 772. Subject matter to which has been added a sub-combination or assembly which is recognized as subject matter of some other class or part of this class.
- (1) Note. Included here are other geometrical instruments such as means for determining angles or grades.
- SEE OR SEARCH CLASS:
346, Recorders, appropriate subclass for rolling contact distance measuring devices combined with means for

recording irregularities in surfaces by shock or vibration and appropriate subclass for devices for measuring and recording distance and functions not included in this class.

776 Belt type:

This subclass is indented under subclass 772. Subject matter wherein the means that bears on the material is an endless band.

777 Inside tube:

This subclass is indented under subclass 772. Subject matter wherein the means that bears on the material is within a hollow cylinder or pipe.

778 On running material (e.g., mill type):

This subclass is indented under subclass 772. Subject matter wherein the means that bears on material is caused to rotate by movement of the material.

779 Implement:

This subclass is indented under subclass 772. Subject matter wherein the measuring means is manually manipulated.

780 With digital indicator:

This subclass is indented under subclass 779. Subject matter wherein the distance is shown in numerals.

781 Including handle for implement:

This subclass is indented under subclass 780. Subject matter wherein the rolling contact is supported on a frame having an extension which is grasped by a person.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

782, for a handle on a nondigital indicator.

782 With handle:

This subclass is indented under subclass 779. Subject matter having an extension which is grasped by a person.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

781, for a handle on a digital indicator.

783 Opposed contacts:

This subclass is indented under subclass 700. Subject matter having at least two relatively movable contact members for contacting an object to be measured.

- (1) Note. The gauge area has contact members that are movable but are held in a set position when being used. They may also include a meter member that indicates if an article is over or under size.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

501+, for gauge means.

784 Digital indicator:

This subclass is indented under subclass 783. Subject matter including an indicator that has a readout in numerals to indicate distance.

785 Fluid indicator:

This subclass is indented under subclass 783. Subject matter wherein the indicator is moved by fluid pressure or fluid is the indicator.

786 Liquid column indicator:

This subclass is indented under subclass 785. Subject matter wherein a column of liquid is subjected to a pressure and the height of the liquid indicates the distance.

787 Extensometer:

This subclass is indented under subclass 783. Subject matter having means for measuring small degrees of movement.

788 With circuit means:

This subclass is indented under subclass 787. Subject matter including electric members for carrying electrical current to the indicator.

789 Including differential transformer:

This subclass is indented under subclass 788. Subject matter having a transformer which joins two or more sources of signals to a common transmission line.

790 Including means to clamp indicator to material:

This subclass is indented under subclass 787. Subject matter having means to hold the indicator on a member being measured.

- 791 Optical indicator:**
This subclass is indented under subclass 783. Subject matter having means for conveying information which may include optic members, lenses or mirrors.
- 792 Rotary indicator:**
This subclass is indented under subclass 783. Subject matter having an indicator with a movable readout member which turns about an axis to indicate information.
- 793 Electrically controlled:**
This subclass is indented under subclass 792. Subject matter wherein the movable member is regulated by electric means.
- 794 Hand held implement:**
This subclass is indented under subclass 792. Subject matter wherein the indicator is supported by a human hand.
- 795 Beam type:**
This subclass is indented under subclass 794. Subject matter wherein the contacting members are mounted on a bar or rod.

SEE OR SEARCH THIS CLASS, SUBCLASS:
501.06, for a beam type comparator.
- 796 Nonpivoted type with scale:**
This subclass is indented under subclass 795. Subject matter having a member with indicia for measuring in addition to the rotary indicator.
- 797 Pivoted type:**
This subclass is indented under subclass 794. Subject matter wherein the contact members are movable about a point.
- 798 Center pivot:**
This subclass is indented under subclass 797. Subject matter having two contact members and wherein the pivot point is on a line median of the members.
- 799 With screw or gear adjustment means:**
This subclass is indented under subclass 798. Subject matter including a threaded member or member with teeth which will cause the contact member to move.
- 800 With spring adjustment means:**
This subclass is indented under subclass 798. Subject matter including resilient means tending to move the contact members.
- 801 With scale:**
This subclass is indented under subclass 798. Subject matter having a member with indicia for measuring in addition to the rotary indicator.
- 802 Rectilinear push or pull actuator:**
This subclass is indented under subclass 794. Subject matter having means to move the contact member back and forth in a straight line.
- 803 Bench type:**
This subclass is indented under subclass 792. Subject matter wherein the contact members have a base for supporting them.
- 804 Lever actuator:**
This subclass is indented under subclass 803. Subject matter having a bar turning about an axis to give motion to the contact members.
- 805 With work support:**
This subclass is indented under subclass 792. Subject matter including means to hold an article or material while being measured.
- 806 Rectilinear indicator:**
This subclass is indented under subclass 783. Subject matter wherein the indicator has a movable readout member which is restricted to move in a straight path to indicate information.
- 807 Pivoted type with scale:**
This subclass is indented under subclass 783. Subject matter wherein the contact members turn about a point or axis and include a member with indicia for measuring.
- 808 With adjustment means:**
This subclass is indented under subclass 807. Subject matter including means to move the contact members.
- 809 Extensible-rule type:**
This subclass is indented under subclass 783. Subject matter wherein the contact members are part of a rule having sections which can be

- adjusted by sliding one section relative to the other.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
452+, for plural straightedges, relatively movable.
- 810 Beam type with scale:**
This subclass is indented under subclass 783. Subject matter wherein the contact members are mounted on a bar or rod and include a member with indicia for measuring.
- 811 With means to adjust one contact member:**
This subclass is indented under subclass 810. Subject matter including means to move one of the contact members.
- 812 Including means to lock one contact member:**
This subclass is indented under subclass 810. Subject matter wherein one of the contact members is movable and means to hold the movable member at a fixed position.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
811, for means to adjust one contact member and means to lock the member.
- 813 Micrometer:**
This subclass is indented under subclass 783. Subject matter including threaded elements for advancing at least one of the contacts and having means for indicating the distance between the contacts which includes a thimble, spindle or barrel having indicia for indicating the distance between the contact.
- (1) Note. The indicating means provides for registering full and fractional turn of the threaded element.
 - (2) Note. Subcombination of micrometer which are not provided elsewhere in this class are properly included here.
 - (3) Note. Generally the movable contact moves only a fraction of the total distance measured, see subclass 821 for preliminary setting.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
821, for preliminary setting of a micrometer.
- 814 Differential screw:**
This subclass is indented under subclass 813. Subject matter wherein one of the contacts is advanced by the difference between the movement produced by two threaded elements.
- 815 With means for maintaining a constant or limited pressure on the contacts:**
This subclass is indented under subclass 813. Subject matter wherein (a) means are provided which stop further movement of the contacts after a predetermined force is applied to the threaded element, or (b) wherein means are provided which indicate when the proper force is applied to the contacting members.
- 816 With wear compensation or backlash prevention means:**
This subclass is indented under subclass 813. Subject matter wherein the threaded element is provided with adjustment means which take up for inaccuracies produced by use or the nature of the threaded element.
- 817 With lock:**
This subclass is indented under subclass 813. Subject matter having means for preventing movement of one of the contacts by securing either the contact or barrel against actuating movement.
- 818 With additional indicator:**
This subclass is indented under subclass 813. Subject matter having (a) additional means for indicating the measured distance, or (b) indicating means not of the thimble and barrel type.
- 819 Digital:**
This subclass is indented under subclass 818. Subject matter wherein the indicator includes numerals as the form of indicia.
- 820 Electrical:**
This subclass is indented under subclass 818. Subject matter wherein the indicating means includes a transducer which is responsive to the contact member movement for producing in an

- electrical circuit an indication of the distance between the contact members.
- 821 With preliminary setting arrangement:**
This subclass is indented under subclass 813. Subject matter wherein one of the contacts may be moved to the approximate distance before one of the contacts is moved by the operation of the threaded element.
- 822 By disengaging threaded element:**
This subclass is indented under subclass 821. Subject matter wherein the threaded element is disconnected so that one of the contacts may be moved without rotating the threaded element.
- 823 Micrometer slidably mounted on a beam:**
This subclass is indented under subclass 821. Subject matter wherein a micrometer is movably mounted as a unit on a support for bringing one of the contacts to an approximate distance.
- 824 Other contact slidable on beam:**
Subject matter under 823 wherein the other contact is also movable along the support.
- 825 Spindle of micrometer slidable:**
This subclass is indented under subclass 821. Subject matter wherein a spindle has a contact member and is adjustable to the approximate distance.
- 826 By use of interchangeable parts of different sizes:**
This subclass is indented under subclass 821. Subject matter wherein the preliminary adjustment of the contacts is made by substituting elements of various dimensions of the micrometer.
- 827 Inside measurement only:**
This subclass is indented under subclass 813. Subject matter wherein the contacts are arranged for measuring the internal space between selected portions of an object.
- (1) Note. The measurement of the inside diameter of a workpiece is provided for here.
- (2) Note. For stem gauge calipers which measure internally see the Search Notes below.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
542.1, for stem gauge caliper.
- 828 With attachment:**
This subclass is indented under subclass 813. Subject matter comprising an additional device employed in combination with micrometers to enhance the use of the micrometer.
- (1) Note. This subclass does not provide for improvements in a micrometer feature.
- 829 Particularly adapted for measuring threaded element:**
This subclass is indented under subclass 828. Subject matter wherein the object is a screw or screw gear.
- 830 With special scale markings:**
This subclass is indented under subclass 813. Subject matter provided with indicia pertaining to a specific type of measurement desired or a specified arrangement of indicia for enhancing reading of the indicia.
- (1) Note. Braille indicia for the blind can be found in this subclass.
- 831 Details (e.g., spindle or anvil adjustment, material):**
This subclass is indented under subclass 813. Subject matter which is directed to a detail of a specific element of the micrometer.
- (1) Note. If the improvement is a subcombination which is not classified elsewhere, such improvement may be included in this subclass.
- 832 Single contact with a work engaging support:**
This subclass is indented under subclass 700. Subject matter for measuring the shortest distance between a contacting member and a reference surface, comprising a member which is supported on the reference surface and wherein the contacting member is movably mounted on the supported member.
- (1) Note. Included here are means which measure the distance that an object extends above a reference surface.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

613+, for a single contact gauge which is used for collocating, aligning or centering.

833 Adapted for a particular workpiece:

This subclass is indented under subclass 832. Subject matter for measuring dimensions of various articles which require the support member and/or the contacting probe to have a configuration so as to conform to the shape of the articles.

- (1) Note. The shape of the workpiece dictates the shape of this group of devices. Not measuring of general application and generally cannot be readily used with other articles.
- (2) Note. The workpiece itself may provide the reference surface.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

511+, for measuring of humans, animals or dental devices.

834 Coating or surface layer thickness:

This subclass is indented under subclass 833. Subject matter wherein the article being measured is a laminated material.

835 Reeled material:

This subclass is indented under subclass 833. Subject matter wherein the article being measured is wound on a cylindrical support.

836 Depth of aperture or groove:

This subclass is indented under subclass 833. Subject matter wherein the article being measured has spaced surfaces and the supported member contacts one of the surfaces and the contacting member contacts one of the other of the spaced surfaces.

837 Fluid actuated indicator:

This subclass is indented under subclass 832. Subject matter wherein the contacting member is activated by a liquid or gas in a passageway for measuring the movement of the member.

838 Screw adjustment:

This subclass is indented under subclass 832. Subject matter wherein the contacting member includes a threaded element for adjustably moving the probe along the supported member.

FOREIGN ART COLLECTIONS

The definitions for FOR 100 below correspond to the definitions of the abolished subclasses under Class 33 from which these collections were formed. See the Foreign Art Collections schedule for specific correspondences. [Note: The titles and definitions for indented art collections include all the details of the one (s) that are hierarchically superior.

FOR 100

Device including an electrically actuated signal or indicator, under the control of the part which is responsive to terrestrial gravitation.

END